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PROCEEDINGS  
OF  
THE MEDICAL SOCIETY  
OF  
LONDON.

VOLUME THE TENTH.



EDITED BY

SAMUEL WEST, M.A., M.D., F.R.C.P.

AND

BERNARD PITTS, M.A., M.C., F.R.C.S.

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1887.



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## THE FOTHERGILLIAN GOLD MEDAL.

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FOR MARCH, 1888.

“ON THE PATHOLOGY, CLINICAL HISTORY, AND DIAGNOSIS OF THE AFFECTIONS OF THE MEDIASTINUM OTHER THAN THOSE OF THE HEART AND AORTA.”

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1783. JOHN SIMS, M.D.	1824. GORDON SMITH, M.D.
1784. JOHN WHITEHEAD, M.D.	1825. EUSEBIUS ARTHUR LLOYD.
1785. JOHN RELPH, M.D.	1826. JOHN HASLAM, M.D.
1787. JOSEPH HOOPER.	1827. WILLIAM KINGDON.
1788. JOHN MEYER, M.D.	1828. JOHN BURNE, M.D.
1789. RICHARD DENNISON, M.D.	1829. WILLIAM GREVILLE JONES.
1790. GEORGE WALLIS, M.D.	1830. LEONARD STEWART, M.D.
1791. SAMUEL SUTTON, M.D.	1831. MONTAGUE GOSSETT.
1792. EDWARD FRYER, M.D.	1832. JOHN WHITING, M.D.
1793. JAMES JAMESON, M.D.	1833. FREDERICK SALMON.
1794. GILBERT THOMPSON, M.D.	1834. WILLIAM SHEARMAN, M.D.
1795. JOHN ABERNETHY.	1835. WALTER COOPER DENDY.
1796. JOHN COAKLEY LETTSOM, M.D., F.R.S.	1836. WILLIAM F. BLICKE, M.D.
1797. JAMES WARE.	1837. EDWARD HEADLAND.
1798. SAMUEL FERRIS, M.D., F.R.S.	1838. THEOPHILUS THOMPSON, M.D., F.R.S.
1799. EDWARD FORD.	1839. GEORGE PILCHER.
1800. THOMAS BRADLEY, M.D.	1840. JAMES RISDON BENNETT, M.D.
1801. WILLIAM CHAMBERLAINE.	1841. WM. DINGLE CHOWNE, M.D.
1802. JOHN SIMS, M.D.	1842. HENRY HANCOCK.
1803. JOHN ANDRÉE.	1843. LEONARD STEWART, M.D.
1804. JOHN COAKLEY LETTSOM, M.D., F.R.S.	1844. THOMAS BELL, F.R.S.
1805. GEORGE PINCKHARD, M.D.	1845. MARSHALL HALL, M.D.
1806. HENRY FIELD.	1846. JOHN BISHOP, F.R.S.
1807. JOSEPH ADAMS, M.D.	1847. GOLDRING BIRD, M.D., F.R.S.
1808. JOHN MASON GOOD, F.R.S.	1848. FRANCIS HIRD.
1809. SAYER WALKER, M.D.	1849. WILLIAM HUGHES WILL- SHIRE, M.D.
1810. GEORGE BIRKBECK, M.D.	1850. FRANCIS HIRD.
1811. WILLIAM BLAIR.	1851. RICHARD ROWLAND.
1812. RICHARD TEMPLE, M.D.	1852. EDWIN CANTON.
1813. RICHARD SAUMAREZ, F.R.S.	1853. JOHN SNOW, M.D.
1814. GEORGE REES, M.D.	1854. HENRY SMITH.
1815. JOHN TAUNTON.	1855. JAMES FERNANDEZ CLARKE.
	1856. BENJ. WARD RICHARDSON, M.D., F.R.S.

1857. WILLIAM ADAMS.	1872. FREDERICK JAMES GANT.
1858. ALFRED BARING GARROD, M.D.	1873. JOHN COCKLE, M.D.
1859. CHARLES HENRY FELIX ROUTH, M.D.	1874. ROBERT BRUDENELL CARTER.
1860. JOHN GAY.	1875. GEORGE BUCHANAN, M.D.
1861. ARTHUR LEARED, M.D.	1876. ERASMIUS WILSON, F.R.S.
1862. VICTOR DE MÉRIC.	1877. JOHN HUGHLINGS-JACKSON, M.D., F.R.S.
1863. SAMUEL OSBORNE HABERSHON, M.D.	1878. ALFRED CARPENTER, M.D.
1864. JOHN LOUIS WILLIAM THUDI- CHUM, M.D.	1879. WALTER JOHN COULSON.
1865. ROBERT GREENHALGH, M.D.	1880. WM. HENRY BROADBENT, M.D.
1866. THOMAS CHRISTOPHER WEE- DEN COOKE.	1881. ARTHUR EDWARD DURHAM.
1867. FREDERICK WILLIAM HEAD- LAND, M.D.	1882. EDMUND SYMES THOMPSON, M.D.
1868. WILLIAM FREDERICK TEEVAN.	1883. EDWARD LUND.
1869. GEORGE DUNCAN GIBB, M.D.	1884. C. THEODORE WILLIAMS, M.D.
1870. FRANCIS MASON.	1885. GEORGE MURRAY HUMPHRY, M.D., F.R.S.
1871. WILLIAM CHOLMELEY, M.D.	1886. RICHARD DOUGLAS POWELL, M.D.
	1887. SIR W. MACCORMAC, F.R.C.S.

#### THE FOTHERGILLIAN GOLD MEDALLISTS.

1787. WILLIAM FALCONER, M.D.	1851. RICHARD HODGES.
1790. ROBERT WILLAN, M.D.	1852. FREDERICK WILLIAM HEAD- LAND.
1791. JOHN COAKLEY LETTSOM, M.D.	1853. ALFRED WILLIAM POLAND.
1795. JOHN MASON GOOD.	1854. BENJAMIN WARD RICHARDSON, M.D.
1801. FRANCIS BOUTTATZ, M.D.	1856. WILLIAM BURKE RYAN.
1803. EDWARD JENNER, M.D.	1857. EDWIN CANTON.
1824. ROBERT W. BAMPFIELD.	1858. THOMAS HERBERT BARKER, M.D.
1828. JOHN GEORGE PARRY.	1859. ALDERMAN THOMAS HOUGHTON WATERS.
1831. WILLIAM AUGUSTUS GUY.	1868. JOHN CLAY.
1834. WILLIAM JAMES CLEMENT.	1870. THOS. SMITH CLOUSTON, M.D.
1835. GEORGE MOORE.	1872. EDWARDS CRISP, M.D.
1836. THOMAS EGERTON BRYANT.	1873. JOHN KENT SPENDER, M.D.
1838. GEORGE PILCHER.	1877. PETER MURRAY BRAIDWOOD, M.D.
1840. SAMUEL OSBORN.	1878. JOHN MILNER FOTHERGILL, M.D.
1842. JAMES RISDON BENNETT, M.D.	1882. THOMAS MICHAEL DOLAN.
1843. JOHN C. WEAVER LEVER, M.D.	1883. NORMAN PORRITT.
1844. HENRY PRATT ROBARTS.	1886. JOHN STRAHAN.
1845. WALTER COOPER DENDY.	
1846. ROBERT MORTIMER GLOVER, M.D.	
1847. SILAS STEDMAN.	
1849. JOHN MILLIGAN.	
1851. RICHARD PAYNE COTTON, M.D.	

## THE HONORARY FELLOWS.

---

1881. BAMBERGER, HENRY, M.D., Professor of Medicine, University of Vienna.

1878. BARKER, FORDYCE, M.D., 85, Madison-avenue, New York, Professor of Clinical Midwifery and Diseases of Women at the Bellevue Hospital Medical College.

1876. BARNES, J. M., M.D., Surgeon-General U.S. Army, Washington.

1877. BENNETT, SIR JAMES RISDON, LL.D., M.D., F.R.S., 22, Cavendish-square, W., late President of the Royal College of Physicians; Consulting Physician to St. Thomas's Hospital and to the Victoria-park Hospital. p 2, vp 2, c 7, o, s 3, fm.

1881. BILLINGS, JOHN S., M.D., Washington, Surgeon to the United States Army; Librarian to the Surgeon-General's Library, Washington.

1881. BIGELOW, HENRY J., M.D., 52, Beacon-street, Boston, U.S.A., late Professor of Surgery at the University of Harvard.

1881. BILLROTH, THEODORE, M.D., Professor of Surgery in the University of Vienna.

1873. BURROWS, Sir GEORGE, Bart., M.D., F.R.S., 18, Cavendish-square, W., Physician in Ordinary to H.M. the Queen; late President of the Royal College of Physicians; Consulting Physician to St. Bartholomew's Hospital.

1881. CHARCOT, Professor J. M., M.D., Physician to the Hôpital de la Salpêtrière, and Professor of the Faculty of Medicine, Paris, 17, Quai Malaquais, Paris.

1873. CHAUVEAU, —, Professor of Physiology at the Medical School of Lyons.

1881. DA COSTA, J. M., M.D., Professor of Medicine in the Jeffreson Medical College, 700, Walnut-street, Philadelphia.

1881. EMMET, THOMAS ADDIS, M.D., 89, Madison-avenue, Surgeon to the Woman's Hospital of the State of New York.

1873. FARRE, ARTHUR, M.D., F.R.S., 18, Albert-mansions, S.W., Physician-Extraordinary to H.M. the Queen; Physician-Accoucheur to H.R.H. the Princess of Wales and H.I.R.H. the Duchess of Edinburgh.

1876. FLINT, AUSTIN, M.D., Professor of Medicine in the Bellevue Hospital Medical College, New York, U.S.A.

1886. GAIRDNER, WILLIAM TENNANT, M.D., F.R.C.S., Professor of Medicine in the University of Glasgow.

1873. GUENEAU DE MUSSY, NOEL, M.D., No. 4, Rue St. Arnaud, Paris, Member of the Academy of Medicine; Physician to the Hôtel Dieu.

1881. HALLA, JOSEPH, Professor of Medicine in the University of Prague.

1869. HARE, CHARLES JOHN, M.D., Manchester-square, W., Emeritus Professor of Clinical Medicine in University College; Consulting Physician to University College Hospital. P, VP 2. C 8, LL. (*Trustee.*)

1873. HELMHOLTZ, HERMANN LUDWIG FERDINAND, M.D., Professor of Physics and Physiological Optics in the University of Berlin.

1883. HUMPHRY, GEORGE MURRAY, M.D., F.R.S., Professor of Surgery in the University of Cambridge. O, C 2.

1873. HUXLEY, THOMAS HENRY, LL.D., Pres. R.S., 4, Marlborough-place, St. John's Wood, N.W., Professor of Biology in the Normal School of Science, and in the Royal School of Mines.

1875. JENNER, Sir WILLIAM, Bart., K.C.B., D.C.L., LL.D., M.D., F.R.S., 63, Brook-street, W., Physician-in-Ordinary to H.M. the Queen and to H.R.H. the Prince of Wales; President of the Royal College of Physicians; Emeritus Professor of Clinical Medicine in University College, London; Consulting Physician to University College Hospital.

1843. JOHNSTONE, HENRY JAMES WOLFENDEN, High View, St. Lawrence, Thanet, formerly Senior Assistant Surgeon and Lecturer on Anatomy and Physiology, St. George's Hospital.

1873. LANGENBECK, BERNHARD VON, M.D., late Professor of Surgery in the University of Berlin.

1884. LARREY, Baron, M.D., Paris, Rue de Lille, 91.

1883. LE ROY DE MERICOURT, A., M.D., Paris,

1832. MITCHELL, S. WEIR, M.D., Walnut-street, Philadelphia.

1881. NUSSBAUM, JOHN NEPOMUK RITTER VON, M.D., Professor of Surgery in the University of Munich.

1875. OLLIER, Professor, Lyons.

1873. OWEN, Sir RICHARD, K.C.B., F.R.S., Sheen Lodge, Richmond Park, Superintendent of the Natural History Department of the British Museum.

1873. PAGET, Sir JAMES, Bart., D.C.L., LL.D., F.R.S., 1, Harewood-place, Hanover-square, W., Serjeant-Surgeon to H.M. the Queen; Surgeon to H.R.H. the Prince of Wales; Consulting Surgeon to St. Bartholomew's Hospital.

1883. PAGET, GEORGE EDWARD, D.C.L., LL.D., M.D., F.R.S., Regius Professor of Physic in the University of Cambridge.

1876. PANCOAST, JOSEPH, M.D., 1030, Chestnut-street, Philadelphia, Professor of Anatomy in the Jefferson Medical College.

1837. QUAIN, RICHARD, F.R.S., 32, Cavendish-square, W., Surgeon-Extra-ordinary to the Queen; Emeritus Professor of Clinical Surgery in University College, and Consulting Surgeon to University College Hospital. VP, C.

1877. SANNE, A., 11, Rue Cambacérès, Paris.

1873. SCANZONI, FRIEDRICH WILHELM VON, M.D., Royal Bavarian Privy Councillor, and Professor of Medicine in the University of Wurzburg.

1835. SEAONE, M., M.D., Salamanca.

- 1881. TARNIER, STEPHANIE, M.D., Professor of Obstetric Medicine in the School of Medicine, Paris.
- 1873. TYNDALL, JOHN, F.R.S., Professor of Natural Philosophy in the Royal Institution.
- 1881. VERNEUIL, AUGUSTE ARISTIDE, M.D., Professor of Medicine in the School of Medicine, Paris.
- 1873. VIRCHOW, RUDOLPH, M.D., Professor of Pathological Anatomy in the University of Berlin.
- 1881. VOLKMANN, RICHARD, M.D., Professor of Surgery in the University of Halle.
- 1838. WILLIAMS, CHARLES JAMES BLASIUS, M.D., F.R.S., 47, Upper Brook-street, W., Physician-Extraordinary to H.M. the Queen ; Emeritus Professor of Medicine and Clinical Medicine in University College ; Consulting Physician to University College Hospital and to the Brompton Hospital for Consumption.

## CORRESPONDING FELLOWS.

1851. ALBARO, J. MENDEZ, Madrid.  
1861. ALVARENGA, PEDRO FRANCISCO DA COSTA, M.D., Lisbon.  
1882. BADALONI, GIUSEPPE, M.D., Fano, Prov. di Roma, Italy.  
1856. BAKER, ALBERT, M.D., Dawlish, Devonshire.  
1855. BEARDSLEY, AMOS, Bay Villa, Grange, Lancashire.  
1850. BENAVENTE, MARIANO, Madrid.  
BENEKE, F. W., M.D., New York.  
1850. BOHM, PROFESSOR, M.D., Vienna.  
BOTTANI, GIUSEPPE, M.D., Milan.  
1865. BRAUN, CARL, M.D., Professor of Midwifery in the University of Vienna.  
1837. BUHRING, J. J., M.D., Berlin.  
1874. BURNESS, ALEXANDER GEORGE, M.D., Port Elizabeth, Cape of Good Hope.  
CADE, THOMAS CHARLES, Spondon, Derby.  
1855. COATES, CHARLES, M.D., F.R.C.P., 10, Circus, Bath, Consulting Physician to the Bath Royal United Hospital. c 3.  
1850. COX, WILLIAM ISIDORE, Hawkesbury Upton, Gloucestershire. c.  
1876. DAWES, RICHARD, St. Mark, Gawler, South Australia.  
DE MUYNCK, J., M.D., Ghent.  
1836. ECSTEIN, SIGISMUND, M.D., Vienna.  
EYLANDT, JOHANN EMIL, M.D., Curland, Russia.  
1853. FALLOT, R., M.D., St. Laurant d'Aigouze, Montpelier, France.  
1864. FIDELI, G., M.D., Rome.  
1876. GRIFFITH, RICHARD GLYN, Allahabad, India.  
1864. HASENFELD, EMMANUEL, M.D., Pesth.  
HYMAN, —, M.D., Antwerp.  
1851. IZGUIERDO, SEBASTIAN OBTEGA, Madrid.  
1875. JONES, PHILIP SYDNEY, M.D., F.R.C.S., Examiner in Medicine in the University of Sydney, Australia, Hon. Consulting Surgeon to the Sydney Infirmary.  
1861. JOURNEZ, HENRI, M.D., 43, Rue de la Charité, Bruxelles, Belgique.  
1852. JUNOD, THEODORE, M.D., Geneva.  
1851. KÖLLIKER, ALBERT, M.D., Professor of Anatomy and Physiology at the University of Wurzburg.  
LAX, WILLIAM, Ormskirk, Lancashire.  
1876. LEIGHTON, WALTER H., M.D., Lowell, Massachusetts, U.S.  
LEON, JOSE, Madrid.

1851. LLANOS, ANTONIO CAMPO, Madrid.  
LOVERA, JOSE, Madrid.  
MARINO, BONIFACIO MATREOS, Madrid.  
MENDEZ, BARTHOLOME, Madrid.  
MOLINA, M. M., Madrid.  
NEGRI, GAETANO, M.D., Pisa.  
ORTEGA, J. R., Madrid.

1865. PERUZZI, DOMENICO, M.D., Sinegaglia.

1882. RESTREPO, ALESSANDO EDUARDO, M.D., Medillin, Columbia, U.S.A.

1886. ROCHA, A., M.D., Coimbra, Beira, Portugal.

1860. ROUSSEL, M.D., Dean of the Faculty of Medicine, Montpelier.  
SCHARLA, GUS. W., M.D., Stettin, Prussia.

1876. SCHMITZ, RICHARD, M.D., Neuenahr.

1874. SCHUTGOWSKY, J., St. Petersburg.

1851. SESSE, M., Mesqui, Madrid.  
STOCKWELL, THOMAS GOLDESBROUGH, F.R.C.S., 6, Circus, Bath,  
Surgeon to the Bath Royal United Hospital.

TEREZA, FELIX GARCIA, Madrid.

VALDEZ, FRANCO CORTIGO, Madrid.

WILLIAMS, CHARLES, F.R.C.S. Edin., 9, Prince of Wales-road, Norwich ;  
Surgeon to the Norfolk and Norwich Hospital.

THE FELLOWS  
OF  
THE MEDICAL SOCIETY OF LONDON.

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## EXPLANATION OF ABBREVIATIONS.

P.—PRESIDENT.	LL.—LETTSONIAN LECTURER.
VP.—VICE-PRESIDENT.	FM.—FOTHERGILLIAN GOLD MEDALLIST.
T.—TREASURER.	SM.—SILVER MEDALLIST.
L.—LIBRARIAN.	O.—ORATOR.
S.—SECRETARY.	§—SEC. FOR FOREIGN CORRESPONDENCE.
C.—COUNCILLOR.	*—LIFE MEMBERS.

N.S.—NON-SUBSCRIBING.

The number prefixed signifies the date of election. The figures appended indicate the number of Sessions served, and refer to past appointments ONLY.

---

1883. ACLAND, THEODORE DYKE, M.A., M.D., 7, Brook-street, Grosvenor-square, W., Assistant Physician to St. Thomas's Hospital, and to the Consumption Hospital, Brompton.

1884. ADAM, JAMES, M.D., Malling-place, West Malling, Kent.

1878. ADAMS, JOSIAH OAKE, M.D., F.R.C.S., Brook House, Upper Clapton, E.

1852. \*ADAMS, WILLIAM, F.R.C.S., 5, Henrietta-street, Cavendish-square, W., Surgeon to the Great Northern Hospital. P, C 8, O, VP 3, LL.

1868. AITKEN, WILLIAM, M.D., F.R.S., Woolston, Southampton, Professor of Pathology, Army Medical School, Netley. NS.

1878. \*ALLCHIN, WILLIAM HENRY, M.B., F.R.C.P., F.R.C.S.E., 5, Chandos-street, Cavendish-square, W., Physician to, and Lecturer on Medicine at, Westminster Hospital. *Librarian.*

1873. ALLEN, HENRY MARCUS, F.R.C.P. Edin., 20, Regency-square, Brighton.

1873. ALLFREY, CHARLES HENRY, M.D., F.R.C.S., St. Mary's Cray, Kent.

1883. ALLINGHAM, HERBERT W., 25, Grosvenor-street, W.

1872. \*ALLINGHAM, WILLIAM, F.R.C.S., 25, Grosvenor-street, W., Surgeon to St. Mark's Hospital. C.

1860. ALTHAUS, JULIUS, M.D., M.R.C.P., Knt. Ord. Crown of Italy, 48, Harley-street, W., Senior Physician to the Hospital for Epilepsy and Paralysis, Regent's Park. c 5, § 3.

1887. ANDERSON, JAMES, M.A., M.D., C.M., 81, Wimpole-street, W., Assistant Physician to the London Hospital.

1885. ANDERSON, JOHN, M.D., 105, Gloucester-place, W.

1869. ARMITAGE, SAMUEL HARRIS TATHAM, M.D., 39, Grosvenor-street, W.

1868. ARMSTRONG, JOHN, M.D., Dartford, Kent.

1871. ARNOLD, WILBERFORCE, J.P., Crescent House, Belfast, Physician to the Rescue Hospital, Belfast. ns.

1882. ASHTON, CHARLES ERNEST (address uncommunicated).

1873. ATKINSON, EDWARD, 36, Albion-street, Leeds, Surgeon to the Leeds General Infirmary; Lecturer on Surgery in the Leeds School of Medicine.

1872. AVELING, JAMES HOBSON, M.D., 1, Upper Wimpole-street, W., Senior Physician to the Chelsea Hospital for Women.

1873. BAGSHAWE, FREDERIC, M.A., M.D., F.R.C.P., 5, Warrior-square, St. Leonards, Physician to the East Sussex Infirmary.

1871. BAILEY, GEORGE HEWLETT, 9, Cavendish-place, W., Chloroformist to the Dental Hospital.

1873. BAILEY, JAMES JOHNSON, M.D., F.R.C.S., Marple, Cheshire.

1876. \*BAKER, HENRY FRANCIS, F.R.C.S. Edin., 30A, George-street, Hanover-square, W. Assistant Surgeon to the Royal Orthopædic Hospital. c.

1878. BALDOCK, ALFRED, M.B., C.M., 180, Earl's Court-road, S.W.

1879. BALKWILL, WILLIAM EDWARD, 9, Old Cavendish-street, Cavendish-square, Surgeon to the Royal Orthopædic Hospital.

1881. BALLANCE, CHARLES ALFRED, M.B., M.S., F.R.C.S., 56, Harley-street, W., Assistant Surgeon to the West London Hospital; Surgical Registrar at St. Thomas's Hospital.

1884. BANKS, W. MITCHELL, M.D., F.R.C.S., 38, Rodney-street, Liverpool, Surgeon to the Liverpool Royal Infirmary, and Professor of Anatomy at the University College, Liverpool.

1859. BARNES, JOHN WICKHAM, F.R.C.S., 3, Bolt-court, E.C. s 2, vp, c 3.

1883. BARNES, ROBERT, M.D., F.R.C.P., 15, Harley-street, W., Consulting Physician to St. George's Hospital.

1876. BARNES, ROBERT SYDENHAM FANCOURT, M.D., C.M., M.R.C.P., 7, Queen Anne-street, W., Physician to the Chelsea Hospital for Women; Physician to the British Lying-in Hospital; Assistant Obstetric Physician to the Great Northern Hospital. c.

1874. BARRETT, HOWARD, 3, Tavistock-square, W.C.

1884. BARROW, ALBERT BOYCE, F.R.C.S., 17, Welbeck-street, W., Assistant Surgeon to King's College Hospital, and to Royal Free Hospital.

1886. BARWELL, RICHARD, F.R.C.S., 55, Wimpole-street, W., Senior Surgeon to Charing Cross Hospital, and Lecturer on Surgery at Charing Cross Hospital Medical School.

1884. BATEMAN, F. AUGUSTUS NEWTON, 62, Pall Mall, S.W.

1868. BATEMAN, FREDERIC, M.D., F.R.C.P., J.P., Upper St. Giles-street, Norwich, Physician to the Norwich and Norfolk Hospital. ns.

1886. BATTERHAM, JOHN WILLIAM, F.R.C.S., M.B., The Cedars, London-road, St. Leonards.

1882. BEACH, FLETCHER, M.B., M.R.C.P., Medical Superintendent to Darenth Asylum, Dartford, Kent.

1868. BEATTY, THOMAS CARLYLE, Seaham Harbour, Durham. ns.

1880. BEEVOR, CHARLES EDWARD, M.D., M.R.C.P., 33, Harley-street, W., Assistant Physician to the National Hospital for the Paralysed and Epileptic.

1868. BELL, The Rev. DAVID, M.A., M.D., C.M., Goole, Yorkshire. c 3.

1872. BELL, JOHN HOUGHAM, M.D., Downside, Ventnor, Isle of Wight. ns.

1887. BENHAM, FREDERICK LUCAS, 93, Elizabeth-street, Eaton-square, S.W., Physician Chelsea, Brompton, and Belgravia Dispensary.

1881. BENNET, ROBERT, M.D., Tankerville House, Park-place, Buxton, Senior Physician to the Devonshire Hospital; Coroner for High and Low Peak.

1883. BENNETT, WILLIAM HENRY, F.R.C.S., 1, Chesterfield-street, Mayfair, W., Assistant Surgeon to, and Lecturer on Anatomy at, St. George's Hospital.

1878. BENTON, SAMUEL, 2, Bennett-street, St. James's, S.W., Surgeon to the North West London Hospital. c 3.

1873. BEVERIDGE, JAMES SPOWART, M.R.C.P. Edin., 8, Eildon-street, Edinburgh.

1879. BINDON, WILLIAM JOHN VEREKER, M.D., D.Sc., C.M., *Travelling.*

1868. BIRD, GEORGE, M.D., 49, Welbeck-street.

1850. \*BIRKETT, JOHN, F.R.C.S., 52, Green-street, Grosvenor-square, W., Consulting Surgeon to Guy's Hospital. vp, c 6.

1883. BISS, CECIL YATES, M.A., M.D., M.R.C.P., 135, Harley-street, W., Assistant Physician to the Middlesex Hospital, and to the Hospital for Consumption, Brompton; Lecturer on Botany at the Middlesex Hospital.

1881. BLACK, JAMES, B.A., F.R.C.S., 16, Wimpole-street, W., Aural Surgeon and Lecturer on Anatomy at the Westminster Hospital.

1886. BLACK, W. J., F.R.C.S., 2, George-square, Edinburgh.

1885. BLAKE, JOHN FRENCH, 1, Princes-street, Storey's Gate, S.W.

1881. BLAKER, WALTER CAMPBELL, Lyndhurst, Hants.

1868. BLOWER, WILLIAM, Bedford. ns.

1871. BLOXAM, JOHN ASTLEY, F.R.C.S., 8, George-street, Hanover-square, W., Surgeon to Charing Cross Hospital, and to the Lock Hospital. s 2, c 2.

1867. BOND, THOMAS, M.B., B.S., F.R.C.S., 7, The Sanctuary, Westminster, S.W., Assistant Surgeon to, and Lecturer on Forensic Medicine at, Westminster Hospital.

1883. BOON, ALFRED, F.R.C.S. Exam., Basse Terre, St. Kitts, W.I.

1886. BOREL, FREDERICK, M.D., 20, St. Stephen's-road, Bayswater, W.

1871. BOTHWELL, GEORGE GRANVILLE, Topsham, Devon.

1879. BOTT, HENRY, Brentford.

1872. BOULTON, PERCY, M.D., M.R.C.P., 6, Seymour-street, Portman-square, W., Physician to the Samaritan Hospital. c.

1886. BOURNE, NEWCOME WHITELAW, M.D., 449, Fulham-road, S.W.

1886. BOUSTEAD, ROBINSON, M.D. (Brigade Surgeon), 4, Adelaide-crescent, Hove, Brighton.

1883. BRADSHAW, JAMES DIXON, M.A., M.B., M.R.C.P., 30, George-street, Hanover-square, W.

BRAIDWOOD, PETER MURRAY, M.D., 2, Delamere-terrace, Birkenhead. FM 1877, ns.

1884. BRAILEY, WILLIAM ARTHUR, M.A., M.D., 11, Old Burlington-street, W., Assistant Ophthalmic Surgeon to Guy's Hospital.

1869. BRAINE, FRANCIS WOODHOUSE, F.R.C.S., 56, Maddox-street, W., Lecturer on Anæsthetics at Charing Cross and Dental Hospitals. VP 2, s 2, c 3, sm.

1876. BREWER, ALEXANDER HAMPTON, 136, Richmond-road, Dalston, E.

1873. BRIDGWATER, THOMAS, M.B., Harrow.

1862. BROADBENT, WILLIAM HENRY, M.D., F.R.C.P., 34, Seymour-street, Portman-square, W., Physician to St. Mary's Hospital, and Examiner in Medicine at the University of London. p, VP, o, ll, c 4.

1879. BROOKFIELD, JOHN STORRS, B.A., M.D., 2, Devonshire Villas, Brondesbury, N.W.

1878. BROOKS, JOB EDWIN, 54, Mill-street, Ludlow, Salop.

1882. BROWN, ALEXANDER STUART, 80, Breakspear-road, St. John's, S.E.

1878. BROWN, ANDREW, M.D., Elton Villa, 1, Bartholomew-road, Kentish Town, N.W.

1871. BROWN, JOHN, Belmont Lodge, St. John's-hill, New Wandsworth, S.W.

1871. BROWNE, SIR JAMES CRICTON, M.D., F.R.S., 7, Cumberland-terrace, Regent's-park, N.W., Lord Chancellor's Visitor in Lunacy. c.

1873. BROWNE, LENNOX, F.R.C.S. Edin., 36, Weymouth-street, W., Senior Surgeon to the Central London Throat and Ear Hospital.

1887. BRUCE, JOHN MITCHELL, M.A., M.D., F.R.C.P., 70, Harley-street, W., Dean Charing Cross Hospital Medical School, Assistant Physician Hospital for Consumption, Brompton.

1873. BRUNJES, MARTIN, 9, York-street, Portman-square, W.

1874. BRUNTON, JOHN, M.A., M.D., 21, Euston-road, N.W., Examiner in Midwifery and Forensic Medicine in the University of Glasgow; Surgeon to the Royal Maternity Charity. VP, c 2, VP.

1874. \*BRUNTON, THOMAS LAUDER, M.D., D.Sc., F.R.C.P., F.R.S., 10, Stratford-place, W., Assistant Physician to, and Lecturer on *Materia Medica* at, St. Bartholomew's Hospital; Examiner in *Materia Medica* in the University of London. *Vice-President*.

1850. BRYANT, THOMAS, F.R.C.S., 65, Grosvenor-street, W., Surgeon to, and Lecturer on Surgery at, Guy's Hospital. p, VP 2, ll, s 2, c 4. *Trustee*.

1848. BRYANT, WALTER JOHN, F.R.C.S., 23A, Sussex-square, W.

1858. BUCHANAN, GEORGE, M.D., F.R.C.P., F.R.S., 24, Nottingham-place, W., Medical Officer to the Local Government Board. P, LL, VP, O, c 3.

1868. BUCKLE, FLEETWOOD, M.D., Staff Surgeon R.N. NS.

1885. BULL, WILLIAM CHARLES, M.A., M.B., F.R.C.S., 45, Curzon-street, Mayfair, W., Surgical Registrar to St. George's Hospital.

1883. BULL, WILLIAM HENRY, St. Oswald's House, Stony Stratford.

1887. BULLEID, EDGAR GEORGE, 65, Edgware-road, W.

1884. BULLOCK, JOSEPH ERNEST, M.D., 87, Ladbroke-grove, W.

1885. BUNNY, J. BRICE, Newbury, Berks.

1872. BURGER, ALEXANDER, M.D., 49, Finsbury-square, E.C., Honorary Surgeon to the German Hospital.

1850. BURNIE, WILLIAM, M.D., Houghton House, Bradford. NS.

1886. BUTLER-SMYTHE, ALBERT CHARLES, F.R.C.S. Edin., 35, Brook-street, Grosvenor-square, W.

1872. BYAS, EDWARD HEGLEY, Grove Hall, Bow.

1886. CAHILL, JOHN, F.R.C.S., 12, Seville-street, Lowndes-square, S.W.

1850. \*Camps, WILLIAM, M.D., F.R.C.S. 7, Church-street, Chelsea, S.W. c 5.

1887. CANTLIE, JAMES, M.A., M.B., C.M., F.R.C.S., 14, Suffolk-street, Pall Mall, S.W., Assistant Surgeon to Charing Cross Hospital and Demonstrator of Anatomy at Charing Cross Hospital Medical School.

1869. CARPENTER, ALFRED, M.A., M.D., J.P., Duppas House, Croydon, Examiner in State Medicine for the University of Cambridge. O, c 3

1882. CARPENTER, ARTHUR BRISTOWE, M.A., M.B., 34, Dingwall-road, Croydon.

1871. CARTER, ROBERT BRUDENELL, F.R.C.S., 27, Queen Anne-street, W., Ophthalmic Surgeon to, and Lecturer on Ophthalmic Surgery at, St. George's Hospital. c 3, VP, O, LL, P.

1848. CARTWRIGHT, SAMUEL, F.R.C.S., 32, Old Burlington-street, W., late Professor of Dental Surgery in King's College; Consulting Surgeon to the Dental Hospital. c 3, VP.

1876. CARTWRIGHT, S. HAMILTON, 23, Old Burlington-street, W., Professor of Dental Surgery in King's College and Dental Surgeon to the Hospital.

1878. CASSIDY, JOSEPH LAMONT, M.D., 44, Harley-street, W., Assistant Physician to the Hospital for Consumption, Hampstead.

1876. \*CATHCART, SAMUEL, M.R.C.P. Edin., Prudhoe House, High-road, Tottenham, E.

1882. CAVAFY, JOHN, M.D., F.R.C.P., 2, Upper Berkeley-street, W., Physician to St. George's Hospital. c 3.

1867. CHAPMAN, JOHN, M.D., Avenue Kleber 46, Paris.

1885. CHASSEAUD, WILLIAM, M.D., Smyrna, Asia.

1868. CHESSALL, WILLIAM, M.D., Horley, Surrey. NS.

1868. CHILD, EDWIN, New Malden, Surrey. NS.

1877. \*CHISHOLM, EDWIN, M.D., Sydney, New South Wales.

1861. CHOLMELEY, WILLIAM, M.D., F.R.C.P., 63, Grosvenor-street, W., Senior Physician to the Great Northern Hospital. VP, O, C 5, SM.

1870. CHRISTIE, THOMAS BEATH, M.D., F.R.C.P., F.R.S.E., C.I.E., Medical Superintendent, Royal India Asylum, Ealing, W.

1871. CHURTON, THOMAS, M.D., 35, Park-square, Leeds, Physician to the Leeds Infirmary, and Lecturer on Medicine in the Yorkshire College.

1854. CLARK, Sir ANDREW, Bart., LL.D., M.D., F.R.C.P., 16, Cavendish-square, W., Physician to, and Lecturer on Clinical Medicine at, the London Hospital. P, VP, LL, C 5, § 6.

1875. CLARK, ANDREW, F.R.C.S., 19, Cavendish-place, W., Assistant Surgeon to, and Lecturer on Practical Surgery at, the Middlesex Hospital.

1873. CLARKE, THOMAS KILNER, M.A., M.D., F.R.C.S., 66, John William-street, Huddersfield, Surgeon to the Huddersfield Infirmary.

1883. CLARKE, WILLIAM BRUCE, M.A., M.B., F.R.C.S., 46, Harley-street, W., Assistant Surgeon and Senior Demonstrator of Anatomy at St. Bartholomew's Hospital; Surgeon to West London Hospital, &c.

1870. CLOUSTON, THOMAS SMITH, M.D., Superintendent, Royal Asylum, Morningside, Edinburgh; Lecturer on Mental Diseases in the University of Edinburgh. FM. 1870. NS.

1873. CLUBBE, WILLIAM HENCHMAN, Grove House, Lowestoft, Surgeon to the Lowestoft Infirmary.

1879. \*CLUTTON, HENRY HUGH, M.A., M.B., F.R.C.S., 2, Portland-place, W., Assistant Surgeon, Aural Surgeon, and Lecturer on Practical Surgery to St. Thomas's Hospital; and Surgeon to the Victoria Hospital for Children. *Councillor.*

1849. COCKLE, JOHN, M.A., M.D., F.R.C.P., F.R.C.S., 8, Suffolk-street, Pall Mall, S.W., Senior Physician to the Royal Free Hospital. P, VP, O, L 3, C, 3, SM.

1848. COGSWELL, CHARLES, M.D., F.L.S., 47, York-terrace, Regent's-park, N.W. S 4. *Trustee.*

1853. COLLAMBELL, CHARLES, F.R.C.S., J.P., The Terrace, 148, Lambeth-road, S.E.

1883. COMPTON, FRANCIS CHARLES, 72, High-street, Poole, Dorset.

1871. COOK, JOHN, M.D., 1, Nottingham-terrace, Regent's-park, N.W., Physician to the Great Northern Hospital.

1862. COOPER, ALFRED, F.R.C.S., 9, Henrietta-street, Cavendish-square, W., Consulting Surgeon to the West London Hospital; Surgeon to the Lock Hospital; and Surgeon to St. Mark's Hospital. C 3, VP.

1885. COOPER, GEORGE OWEN WHITE, M.A., M.B., 5, Cranley-gardens, S.W.

1872. CORFIELD, WILLIAM HENRY, M.A., M.D., F.R.C.P., 19, Savile-row, Professor of Hygiene in University College; Medical Officer of Health for St. George's, Hanover-square. C.

1861. COULSON, WALTER JOHN, F.R.C.S., 17, Harley-street, W., Senior Surgeon to the Lock Hospital and to St. Peter's Hospital. O, S 2, C 4.

1884. COULTER, WILLIAM, M.D., 50, Chelsham-road, Clapham.

1879. COUPLAND, SIDNEY, M.D., F.R.C.P., 14, Weymouth-street, W., Physician to, and Joint Lecturer on Practical Medicine at, the Middlesex Hospital; Examiner in Pathology in the University of Edinburgh. c.

1874. CRAIGIE, JOHN HAMILTON, 13, Savile-row, W., Surgeon Dentist to the Chelsea Hospital for Women. c.

1873. CRAVEN, ROBERT MARTIN, J.P., 14, Albion-street, Hull, Surgeon to the Hull General Infirmary.

1881. CRIPPS, WILLIAM HARRISON, F.R.C.S., 2, Stratford-place, W., Assistant Surgeon to St. Bartholomew's Hospital. *Councillor.*

1880. CRITCHETT, GEORGE ANDERSON, M.A., F.R.C.S. Edin., 21, Harley-street, W., Ophthalmic Surgeon, and Lecturer on Ophthalmic Surgery, to St. Mary's Hospital.

1880. CROCKER, HENRY RADCLIFFE, M.D., B.S., F.R.C.P., 28, Welbeck-street, W., Physician to the Skin Department at University College Hospital, Physician to the East London Hospital for Children. c 3.

1881. CROSS, FRANCIS RICHARDSON, M.B., F.R.C.S., Chandos Villa, Clifton, Bristol, Surgeon to the Bristol Royal Infirmary; Lecturer on Anatomy in the Bristol Medical School.

1884. CROSS, HORATIO ROBERT ODO, Richmond Barracks, Dublin.

1855. CROSS, ROBERT, M.D., 42, Craven-street, Strand, W.C.

1881. CULLIMORE, DANIEL HENRY, M.D., F.R.C.S.I., 27, Welbeck-street, W., Senior Physician to the North-West London Hospital.

1874. CUMBERBATCH, ALPHONSO ELKIN, M.B., F.R.C.S., 17, Queen Anne-street, W., Aural Surgeon to St. Bartholomew's Hospital. c 2.

1871. DALBY, SIR WILLIAM BARTLETT, B.A., M.B., F.R.C.S., 18, Savile-row, W., Aural Surgeon to, and Lecturer on Aural Surgery at, St. George's Hospital. c.

1864. DALE, GEORGE CORNELIUS, M.D., F.R.C.S., Ivy Lodge, Upper Tooting, S.W.

1881. DALLAWAY, DENNIS JOSEPH WILLIAM, Pall Mall Club, S.W.

1873. DALY, OWEN, M.D., F.R.C.P., J.P., 23, Albion-street, Hull, Physician to the Hull Infirmary.

1885. DAVIES-COLLEY, JOHN NEVILLE COLLEY, M.A. Cantab., M.B., M.C., and F.R.C.S. Eng., 36, Harley-street, W., Surgeon to, and Lecturer on Anatomy at, Guy's Hospital; Examiner in Surgery at the University of Cambridge. *Councillor.*

1880. DAVSON, SMITH HOUSTON, M.D., Campden Villa, 203, Maida-vale, W. *Councillor.*

1868. \*DAVY, RICHARD, M.B., F.R.C.S., F.R.S.E., 33, Welbeck-street, W., Surgeon to, and Lecturer on Practical Surgery at, Westminster Hospital. VP, S 2, SM, § 2.

1876. DAWES, H. ST. M., Gawler, South Australia.

1880. DAWSON, YELVERTON, M.D., Heathland, Southborne-on-Sea, Christchurch, Hants.

1867. DAY, WILLIAM HENRY, M.D., M.R.C.P., 10, Manchester-square, W., Physician to the Samaritan Free Hospital. c 3.

1883. DENT, CLINTON THOMAS, M.A., F.R.C.S., 61, Brook-street, Grosvenor-square, W., Assistant Surgeon to, and Lecturer on Practical Surgery at, St. George's Hospital.

1879. DEWAR, JOHN, 132, Sloane-street, S.W.

1881. DICKSON, FRANCIS KENNEDY, F.R.C.P. Edin., Wye House Lunatic Asylum, Buxton, Derbyshire.

1885. DODD, HENRY WORK, 47, Kensington Park-gardens. W.

1882. DOLAN, THOMAS MICHAEL, Horton House, Halifax. FM 1882.

1881. DORAN, ALBAN HENRY GRIFFITHS, F.R.C.S., 9, Granville-place, W., Surgeon to Out-Patients at the Samaritan Free Hospital.

1872. DOWN, JOHN LANGDON HAYDON, M.D., F.R.C.P., 81, Harley-street, W., Physician to, and Lecturer on Clinical Medicine at, the London Hospital. VP. *Councillor.*

1871. DOWSE, THOMAS STRETCH, M.D., 14, Welbeck-street, W., Physician to the North London Hospital for Consumption. s, c 3.

1885. DREW, EDWIN, B.Sc., M.D. (Surg.-Major), 32, Holland-park, W.

1877. DREW, JOHN HENRY, 2, Cambridge-terrace, Hyde-park, W., Consulting Surgeon to the Metropolitan Ear and Throat Infirmary. c 3.

1881. DREWITT, FREDERIC GEORGE DAWTREY, M.A., M.D., M.R.C.P., 52, Brook-street, W., Assistant Physician to the West London Hospital, and to the Victoria Hospital for Children.

1874. DRYSDALE, CHARLES ROBERT, M.D., M.R.C.P., 23, Sackville-street, W., Senior Physician to the Metropolitan Free Hospital.

1874. DUNCAN, B. ARCEDECKNE, M.D., M.R.C.P., 29, Wimpole-street, W., Physician to the National Hospital for Diseases of the Heart and Paralysis.

1848. DUNCAN, JAMES, M.B., 8, Henrietta-street, Covent-garden, W.C.

1878. DUNCAN, JAMES MATTHEWS, LL.D., M.D., F.R.C.P., F.R.S., 71, Brook-street, W., Physician-Accoucheur to, and Lecturer on Midwifery at, St. Bartholomew's Hospital.

1886. DUCKWORTH, SIR DYCE, M.D., F.R.C.P., 11, Grafton-street, Piccadilly, W., Physician and Lecturer on Clinical Medicine at St. Bartholomew's Hospital; Examiner in Medicine to the Royal College of Physicians.

1884. DUNCAN, W. A., M.D., 6, Harley-street, W., Assistant Obstetric Physician to, and Teacher of Operatic Midwifery at, the Middlesex Hospital.

1857. DUNN, ROBERT WILLIAM, 13, Surrey-street, Strand, W.C.

1873. DURANTY, E. NICHOLAS, M.D., Marseilles. NS.

1873. \*DURHAM, ARTHUR EDWARD, F.R.C.S., 82, Brook-street, W., Surgeon to, and Lecturer on Surgery at, Guy's Hospital. P, O, C. *Treasurer.*

1884. DURHAM, FREDERICK, F.R.C.S., 82, Brook-street, W., Senior Surgeon, North West London Hospital

1878. EDIS, ARTHUR WELLESLEY, M.D., F.R.C.P., 22, Wimpole-street, W., Obstetric Physician to, and Lecturer on Obstetric Medicine at, the Middlesex Hospital.

1860. EDMUNDS, JAMES, M.D., M.R.C.P., 8, Grafton-street, W., Senior Physician to the London Temperance Hospital; Medical Officer of Health and Public Analyst for St. James's, London.

1880. EDWARDS, FREDERICK SWINFORD, F.R.C.S., 63, Wimpole-street, W., Surgeon to the West London Hospital, and to Out-Patients' Hospital for Stone.

1868. ELLIOTT, GEORGE FREDERICK, M.D., F.R.C.P., 1, Albion-street, Hull, Physician to the Hull General Infirmary.

1882. ELLIOTT, THOMAS, M.D., Monson-place, Tunbridge Wells.

1883. EMOND, E., 113, Beaumarchais, Paris, France.

1883. ENGLISH, EDGAR, 1, Manor-road, Stoke Newington, N.

1880. ENGLISH, THOMAS JOHNSTON, M.D., 128, Fulham-road, S.W.

1883. EWART, JOSEPH, M.D., F.R.C.P., J.P., Montpellier Hall, Brighton, Retired Dep. Surgeon-General, Bengal Army; late Principal Professor of Medicine, and Senior Physician, Calcutta Medical College.

1877. EWART, WILLIAM, M.D. Cantab, F.R.C.P., 33, Curzon-street, Mayfair, W., Assistant Physician to, and Lecturer on Physiology at, St. George's Hospital. c.

1884. FARDON, EDWARD ASHBY, Resident Medical Officer, Middlesex Hospital, W.

1869. FARQUHARSON, ROBERT, M.D., F.R.C.P., M.P., Reform Club, S.W. c.

1873. FAYRER, Sir JOSEPH, K.C.S.I., LL.D., M.D., F.R.C.P., F.R.C.S., F.R.S., 53, Wimpole-street, W., Honorary Physician to H.M. the Queen and to H.R.H. the Prince of Wales; Physician to H.R.H. the Duke of Edinburgh; Physician to the Secretary of State for India in Council; President of the Medical Board, India Office; Consulting Physician to Charing Cross Hospital. VP, LL, SM, P. *Orator.*

1884. FENTON, FREDERICK ENOS, F.R.C.S., Macquarie House, Ealing, W.

1885. FENWICK, EDWIN HURRY, F.R.C.S., 5, Old Burlington-street, W., Assistant Surgeon to the London Hospital; Surgeon and Pathologist to St. Peter's Hospital for Stone and Urinary Diseases.

1878. FIELD, GEORGE, F.R.C.S., 15, Wimpole-street, W., Aural Surgeon to, Lecturer on Aural Surgery at, St. Mary's Hospital, and Dean of St. Mary's Medical School.

1883. FINLAY, DAVID WHITE, M.D., F.R.C.P., 9, Lower Berkeley-street, W. Physician to, and Lecturer on Forensic Medicine and Public Health at, the Middlesex Hospital. c.

1876. FISHER, FREDERIC RICHARD, F.R.C.S., 58, Harley-street, W., Senior Surgeon to the National Orthopædic Hospital.

1868. FLETCHER, THOMAS BELL ELCOCK, M.D., F.R.C.P., J.P., 43, Clarendon-square, Leamington, Consulting Physician to the Birmingham General Hospital. NS.

1884. FLINT, ARTHUR, M.D., Westgate Lodge, Westgate-on-Sea.

1868. FOLKER, WILLIAM HENRY, F.R.C.S., Hanley, Staffordshire, Senior Surgeon to the North Stafford Infirmary. ns.

1878. \*FONMARTIN, HENRY DE, M.D., B.Sc., B.C.L., M.R.C.P., Parkhurst, Isle of Wight.

1869. FOSTER, SIR BALTHAZAR, M.D., F.R.C.P., 14, Temple-row, Birmingham, Physician to the General Hospital, Birmingham; Professor of Physic in the Queen's College, Birmingham. ns.

1884. FOTHERBY, HENRY ARTHUR, 3, Finsbury-square, E.C.

1872. FOTHERGILL, JOHN MILNER, M.D., M.R.C.P., 3, Henrietta-street, Cavendish-square, W., Physician to the City of London Hospital for Diseases of the Chest. c.

1879. FOWLER, JAMES KINGSTON, M.A., M.D., M.R.C.P., 35, Clarges-street, Mayfair, W., Senior Assistant Physician and Pathologist to, and Lecturer on Pathological Anatomy at, the Middlesex Hospital, Assistant Physician to the Hospital for Consumption, Brompton. s 2.

1873. FOX, ARTHUR EDWARD WELLINGTON, M.B., C.M., 16, Gay-street, Bath, Physician to the Royal United Hospital, Bath.

1868. FOX, CHARLES HENRY, M.D., Brislington House, near Bristol. ns.

1887. FOX, FORTESCUE, M.B., Strathpeffer Spa, Ross-shire.

1871. FOX, FRANCIS, 68, Wimpole-street, W., Dental Surgeon to the Victoria Hospital for Children. *Councillor.*

1868. FOX, JOHN MAKINSON, The Grove, Lymm, Cheshire. ns.

1885. FOX, R. HINGSTON, M.D., 43, Finsbury-circus, E.C.

1879. FOX, THOMAS COLCOTT, B.A., M.B., M.R.C.P., 14, Harley-street, W., Physician in charge of the Skin Department, Westminster Hospital.

1887. FRAZER, ROBERT FAIR, 185, Lavender-hill, New Wandsworth, S.W.

1868. FREER, ALFRED, J.P., Stourbridge, Worcestershire.

1886. FRITH, BAPTIST GAMBLE, M.B., B.Ch., 29, Cornwallis-gardens, Hastings.

1884. FROST, WILLIAM ADAMS, F.R.C.S., 17, Queen Anne-street, W., Assistant Ophthalmic Surgeon to St. George's Hospital.

1883. GABBETT, HENRY SINGER, M.A., M.D., M.R.C.P., 8, Chiswick-place, Eastbourne.

1868. GAINES, CHARLES, 30, Gay-street, Bath, Dental Surgeon to the Royal United Hospital. ns.

1862. GANT, FREDERICK JAMES, F.R.C.S., 16, Connaught-square, W.; Senior Surgeon to the Royal Free Hospital. p, vp 2, ll, o, c 3.

1887. GARROD, ARCHIBALD EDWARD, M.A., M.B., 9, Chandos-street, W.

1847. GARROD, Sir ALFRED BARING, M.D., F.R.C.P., F.R.S., 10, Harley-street, W., Consulting Physician to King's College Hospital. p, vp 2, ll, o, c 9.

1881. GAWITH, JAMES JACKSON, 23, Westbourne-park-terrace, W.

1873. GEE, ROBERT, M.D., M.R.C.P., 5, Abercromby-square, Liverpool, Consulting Physician to the Hospital for Diseases of the Chest, Liverpool.

1879. GIBBES, HENEAGE, M.D., C.M., Physiological Laboratory, Westminster Medical School, Lecturer on Physiology and Histology at the Westminster Hospital.

1856. GIBBON, SEPTIMUS, B.A., M.B., M.R.C.P., 39, Oxford-terrace, W., Medical Officer of Health, Holborn.

1882. GIBBONS, ROBERT ALEXANDER, M.D., C.M., M.R.C.P., 32, Cadogan-place, S.W.

1881. GIFFARD, DOUGLAS W., 5, Pavilion-parade, Brighton.

1867. GILL, WILLIAM, 11, Russell-square, W.C.

1871. GLYNN, THOMAS ROBINSON, M.D., F.R.C.P., 62, Rodney-street, Liverpool, Physician to the Royal Infirmary, Liverpool. ns.

1857. GODFREY, JOHN BLENNERHASSET, M.D., F.R.C.P. Edin., Ormonde House, North-gate, Regent's-park, N.W.

1869. GODSON, CLEMENT, M.D., M.R.C.P., 9, Grosvenor-street, W., Assistant Physician-Accoucheur to St. Bartholomew's Hospital. vp, c 3, s 2, sm.

1873. GOODSALL, DAVID HENRY, F.R.C.S., 17, Devonshire-place, Portland-place, W., Surgeon to the Metropolitan Free Hospital; Assistant Surgeon to St. Mark's Hospital. s 2, sm.

1880. GOUDÉ, HERBERT, F.R.C.S. Edin., Smallpox Hospital, Highgate-hill, N.

1878. \*GOULD, ALFRED PEARCE, M.S., F.R.C.S., 16, Queen Anne-street, W., Assistant Surgeon to the Middlesex Hospital. c 3, s 2.

1876. GOWERS, WILLIAM RICHARD, M.D., F.R.C.P., 50, Queen Anne-street, W., Physician to, and Assistant Professor of Clinical Medicine at, University College Hospital; Physician to the National Hospital for the Paralysed and Epileptic. c, sm.

1874. GOWLAND, PETER YEAMES, F.R.C.S., 34, Finsbury-square, E.C., Senior Surgeon to St. Mark's Hospital.

1887. GRANT, JAMES EDWARD RONEY, 34, Sutherland-gardens, Harrow-road, W.

1867. GRASEMANN, CHRISTIAN EDWARD, M.D., 46, Albany-street, Regent's-park, N.W.

1881. GREEN, THOMAS HENRY, M.D., F.R.C.P., 74, Wimpole-street, W., Physician to, and Lecturer on Pathological Anatomy at, Charing Cross Hospital; Senior Assistant Physician to the Hospital for Consumption, Brompton. *Vice-President.*

1841. \*GREENHALGH, ROBERT, M.D., 35, Cavendish-square, W., late Physician-Accoucheur to St. Bartholomew's Hospital, p, vp, o, s 3, c 5.

1868. GREGSON, GEORGE, 63, Harley-street, Dental Surgeon to the Dental Hospital of London.

1886. GREVES, EDWIN HYLA, M.D., Rodney-house, Bournemouth.

1873. GRIEVE, ROBERT, M.D., British Guiana.

1884. GRIFFITH, DAVID CHARLES BALLINGER, 3, Lansdowne-place, Brighton.

1875. GRIFFITH, G. DE CORREQUER, 34, St. George's-square, S.W.

1885. GRIFFITHS, CHARLES THOMAS, Mineral Water Hospital, Bath.

1884. GRIFFITHS, HERBERT TYRRELL, M.A. Camb., M.B., 57, Brook-street, Grosvenor-square, W., Physician to the Seamen's Hospital, Greenwich.

1880. GRISTOCK, WILLIAM, M.D. Lond., 6, Finchley-road, N.W.

1887. GULLIVER, GEORGE, M.A., M.B., F.R.C.P., 16, Welbeck-street, Cavendish-square, W., Assistant Physician to, and Lecturer on Comparative Anatomy at, St. Thomas's Hospital.

1886. HABERSHON, S. HERBERT, M.A. Cantab, M.D., M.R.C.P., M.R.C.S., 2, Upper Wimpole-street, Assistant Physician, Royal Hospital for Diseases of the Chest, City Road, Physician to Marylebone General Dispensary.

1859. HABERSHON, SAMUEL OSBORNE, M.D., F.R.C.P., 70, Brook-street, W., late Senior Physician to, and Lecturer on Medicine at, Guy's Hospital. p, ll, o, c 3.

1884. HADDEN, WALTER BAUGH, M.D., 21, Welbeck-street, Cavendish-square, W., Assistant Physician to St. Thomas's Hospital and to the Children's Hospital, Great Ormond Street.

1884. HAIRSINE, HUDSON, Roos, near Hull, Yorkshire.

1881. HALL, CHARLES ROSS, Hatfield, Herts.

1874. \*HALL, FRANCIS DE HAVILLAND, M.D., F.R.C.P., 47, Wimpole-street, W., Assistant Physician to, and Lecturer on Medical Jurisprudence at, the Westminster Hospital. c 4, s 2, sm.

1885. HALPIN, RICHARD FREDERICH BESTALL, Arklow, co. Wicklow, Ireland.

1881. HAMES, GEORGE HENRY, F.R.C.S., 2, Queenborough-terrace, Kensington-gardens, W.

1880. HAMILTON, FRANCIS GEORGE, *Travelling.*

1871. HAMILTON, ROBERT, M.D., *Travelling.*

1879. HAMILTON, SETON GUTHRIE, Surgeon 1st Life Guards.

1882. HARPER, GERALD SAMUEL, M.B., 5, Hertford-street, Mayfair.

1871. HARRIS, CHARLES JAMES, 4, Kilburn Priory, N.W.

1872. HARRIS, HENRY, LL.D., M.D., F.R.C.S., Redruth, Cornwall. ns.

1873. HARRIS, WILLIAM JOHN, 26, Marine Parade, Worthing, Senior Medical Officer to the Worthing Infirmary.

1851. HARRISON, CHARLES HENRY ROGERS-, F.R.C.S., Vine House, 55, Stockwell-road, S.W., Consulting Surgeon to St. Pancras Infirmary. vp 2, t 6, s 5, c 3, sm. *Trustee.*

1871. HARRISON, REGINALD, F.R.C.S., 38, Rodney-street, Liverpool, Surgeon to the Royal Infirmary. ns. *Lettsomian Lecturer.*

1883. \*HARTRIDGE, GUSTAVUS, F.R.C.S., 62, Green-street, Grosvenor-square, W., Consulting Ophthalmic Surgeon to St. Bartholomew's Hospital, Chatham, and Assistant Surgeon to the Royal Westminster Ophthalmic Hospital.

1864. HARVEY, JOHN ALEXANDER, 35, Princes-square, Bayswater, W.

1882. HARVEY, JOHN STEPHENSON, 69, Rue Faidherbe, Boulogne-sur-Mer, France.

1882. HASLAM, WILLIAM FREDERICK, F.R.C.S., 33, Paradise-street, Birmingham, Assistant Surgeon to the Birmingham General Hospital.

1852. HAWARD, EDWIN, M.D., M.R.C.P., F.R.C.S., 9, Wimpole-street, W., Physician to the North London Consumption Hospital.

1883. HAWKEN, CHARLES ST. AUBYN, 20, North-terrace, Wandsworth, S.W.

1871. HEMMING, WILLIAM BENJAMIN, 26, Notting-hill-terrace, W.

1884. HENSMAN, ARTHUR, F.R.C.S., 31, Harley-street, W., Aural Surgeon to the Middlesex Hospital, and Lecturer on Aural Surgery and Anatomy at the Middlesex Hospital Medical School.

1883. HERMAN, GEORGE ERNEST, M.B., M.R.C.P., F.R.C.S., 20, Harley-street, W., Obstetric Physician to, and Lecturer on Obstetric Medicine at, the London Hospital.

1879. HERON, GEORGE ALLAN, M.D., M.R.C.P., 57, Harley-street, Cavendish-square, W., Physician to the City of London Hospital for Diseases of the Chest.

1886. HERRINGHAM, WILMOT PARKER, B.A., M.B., 22, Bedford-square, W.C.

1883. HERSCHEL, GEORGE A., M.D., West-street, Finsbury-circus, E.C.

1883. HEWITT, FREDERICK WILLIAM, B.A., M.D., 10, George-street, Hanover-square, W., Assistant Chloroformist at Charing Cross Hospital.

1876. HEYCOCK, FRANCIS RAWORTH, M.D., C.M., 26, Upper Wimpole-street, W., Surgeon to St. Peter's Hospital.

1872. HICKS, JOHN BRAXTON, M.D., F.R.C.P., F.R.S., 24, George-street, Hanover-square, Physician-Accoucheur to St. Mary's Hospital. c.

1884. HILL, BERKELEY, F.R.C.S., M.B., 66, Wimpole-street, W., Surgeon to University College Hospital and Professor of Clinical Surgery in University College.

1881. HILL, JAMES, M.D., Thatched House Club, St. James's, S.W. *Travelling.*

1867. HILL, THOMAS HARVEY, 34, St. John-street, Oxford. t, c 3.

1840. HIRD, FRANCIS, F.R.C.S., 13, Old Burlington-street, W., Consulting Surgeon to the Charing Cross Hospital. p 2, vp 6, ll, o 2, c 12. *Trustee.*

1873. HOBSON, WILLIAM HENRY, Great Berkhamstead, Herts, Honorary Surgeon to the West Herts Infirmary.

1879. HOGG, ARTHUR JOHN, Westbourne Villa, Ealing, W.

1884. HOLLAND, CHARLES EDWARD, M.B., "The Elms," Ayton, Berwick-on-Tweed.

1868. HOLMAN, CONSTANTINE, M.D., Reigate. c 4.

1881. HOOD, DONALD WILLIAM CHARLES, M.D., M.R.C.P., 43, Green-street, W., Physician to the West London Hospital.

1879. HOOKHAM, PAUL, 7, Bloomsbury-place, W.C.

1875. HOPE, WILLIAM, M.D., M.R.C.P., 56, Curzon-street, Mayfair, W., Senior Physician to Queen Charlotte's Lying-in Hospital, and Senior Physician to the Belgrave Hospital for Children.

1883. \*HOVELL, T. MARK, F.R.C.S. Edin., 3, Mansfield-street, W., Aural Surgeon to the London Hospital.

1886. HUDDART, CUTHBERT HENRY COOKE, B.A., M.B., 77, Redcliffe-gardens, S.W.

1885. HUDSON, CHARLES LEOPOLD, F.R.C.S., 34, Welbeck-street, W., Pathologist and Curator of the Museum of Middlesex Hospital.

1864. HUME, FREDERICK HENRY, 53, Devonshire-street, Islington, N.

1885. HUMPHREYS, CHARLES STYLE, M.D., 3, Chichester-street, St. George's-square, S.W.

1884. HUNTER, SIR WILLIAM GUYER G., M.D., F.R.C.P., 21, Norfolk-crescent, Hyde-park, W., Honorary Surgeon to H.M. the Queen, Consulting Physician to Charing Cross Hospital.

1881. HUTCHINSON, JONATHAN, F.R.C.S., F.R.S., 15, Cavendish-square, Consulting Surgeon to the London Hospital; late Professor of Pathology and Surgery at the Royal College of Surgeons. LL, c 3.

1875. HUTCHINSON, SAMUEL JOHN, 64, Brook-street, W., Dental Surgeon to, and Clinical Lecturer at, the University College Hospital, and Surgeon to the Dental Hospital of London. c 2.

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1868. JACKSON, JOHN HUGHINGS, M.D., F.R.C.P., F.R.S., 3, Manchester-square, W., Physician to the London Hospital. o, c 2, vp. PRESIDENT.

1853. JACKSON, ROBERT, M.D., 53, Notting-hill-square, W.

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1882. JAMES, JOSEPH BRINDLEY, 47, Jamaica-road, Bermondsey, S.E.

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1875. JONES, SYDNEY, M.B., F.R.C.S., 16, George-street, Hanover-square, W., Senior Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital.

1881. JONES, THOMAS WILLIAM CARMALT, M.A., 6, Westbourne-street, W., Assistant Surgeon to the Western Ophthalmic Hospital.

1877. JULER, HENRY EDWARD, F.R.C.S., 77, Wimpole-street, W., Assistant Surgeon and Pathologist to the Westminster Ophthalmic Hospital.

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1884. KEETLEY, CHARLES BELL, F.R.C.S., 10, George-street, Hanover-square, W., Senior Surgeon to the West London Hospital; Surgeon to the Surgical Aid Society.

1847. KELLOCK, WILLIAM BERRY, M.D., F.R.C.S., Stamford-hill, N.

1883. KEMP, JOHN ROBERT, 101, Jermyn-street, S.W.

1884. KERR, NORMAN, M.D., 42, Grove-road, N.W., Medical Officer (Christchurch District) St. Marylebone, N.W.

1881. KESER, JEAN SAMUEL, M.D., 11, Harley-street, W. c 2.

1876. KEY, AUGUSTUS COOPER, M.R.C.P. Edin., 30, Wilton-place, S.W.

1886. KIDD, PERCY, M.A., M.D., F.R.C.P., 60, Brook-street, Grosvenor-square, W., Assistant Physician and Pathologist to the Consumption Hospital, Brompton, S.W.

1868. KIRKMAN, WILLIAM PHILLIPS, M.D., Fearon-road, Hastings. NS.

1868. KNAGGS, SAMUEL, Ebor Mount, Huddersfield, Surgeon to the Huddersfield and Upper Agbrigg Infirmary. NS.

1883. KNAPTON, GEORGE, 11, Houghton-street, Southport.

1875. KNOX, JOHN, M.D., M.C., Resident Medical Officer, Bethnal Green Infirmary, E.

1868. LAKE, WILLIAM CHARLES, M.D., Teignmouth, Devon, Surgeon to the Teignmouth Infirmary.

1883. LANGFORD, PHINEAS PITTS, M.D., Park Lodge, East Finchley, N.

1881. LANGTON, JOHN, F.R.C.S., 2, Harley-street, W., Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital. *Councillor.*

1882. LARKIN, FRANK COLET, M.B., C.M., 54, Regent-street, W.

1875. LATTEY, JAMES, 23, St. Mary Abbot's-terrace, Kensington, W.

1858. LAWSON, GEORGE, F.R.C.S., 12, Harley-street, W., Surgeon to the Middlesex Hospital, and to the Royal London Ophthalmic Hospital. VP 2, c 3.

1869. LEES, CHARLES ALEXANDER, M.D., Fleet Surgeon, R.N. NS.

1886. LEGGATT, CHARLES ASHLEY SCOTT, C.M., 2, Walton-place, S.W.

1858. LEMON, OLIVER, King's Langley, Herts.

1886. LEWERS, ARTHUR HAMILTON NICHOLSON, M.B. Lond., 60, Wimpole-street, W., Assistant Obstetric Physician at the London Hospital.

1867. LICHTENBERG, GEORGE, M.D., M.R.C.P., 47, Finsbury-square, Surgeon to the German Hospital. c 2.

1869. LIPSCOMB, JOHN THOMAS NICHOLSON, M.D., F.R.C.S., St. Albans, Herts. NS.

1878. LISTER, Sir JOSEPH, Bart., D.C.L., LL.D., M.D., F.R.C.S., F.R.S., 12, Park-crescent, Portland-place, Surgeon Extraordinary to H.M. the Queen; Surgeon to, and Professor of Clinical Surgery at, King's College Hospital.

1886. LLOYD, SAMUEL, M.D., 4, High-street, Bloomsbury, W.C.

1878. LOCKWOOD, CHARLES BARRETT, F.R.C.S., 19, Upper Berkeley-street, Portman-square, W., Surgeon to the Great Northern Hospital.

1873. LOE, JAMES SCARBOROUGH, 26, Woodhouse-lane, Leeds, Surgeon to the Leeds Fever Hospital.

1881. LORIMER, G., M.D., Buxton, Derbyshire.

1868. LOWE, JOHN, M.D., J.P., 42, Green-street, Grosvenor-square, W., Honorary Physician to His Royal Highness the Prince of Wales ; Vice-President and late Consulting Surgeon to the West Norfolk and Lynn Hospital. *Councillor.*

1868. \*LUND, EDWARD, F.R.C.S., 22, St. John's-street, Manchester, Consulting Surgeon to the Manchester Royal Infirmary ; Professor of Surgery in Owen's College ; Examiner at the Royal College of Surgeons. o, c 3.

1869. LUNN, WILLIAM JOSEPH, M.D., F.R.C.S., Hull, Senior Surgeon to the Hull General Infirmary. ns.

1879. LYONS, RICHARD THOMAS, Surgeon-Major, Bengal Army.

1884. MACBRYAN, HENRY CRAWFORD, Assistant Medical Officer, Middlesex County Asylum, Hanwell.

1885. MACCONNELL, HENRY W., B.A., M.B., Brooklands, Manchester.

1871. MACCORMAC, Sir WILLIAM, M.A., D.Sc., M.Ch., F.R.C.S., 13, Harley-street, W., Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital. § 2, c 3. *Vice-President.*

1885. MCGEAGH, THOMAS EDWIN FOSTER, 23, New Cavendish-street, W.

1885. MACGUIRE, ROBERT, M.D., 25, Westbourne-terrace, W., Assistant Physician, St. Mary's Hospital. *Councillor.*

1882. MACKELLAR, ALEXANDER OBERLIN, M.D., M.Ch., F.R.C.S., 22, George-street, Hanover-square, W., Surgeon to, and Lecturer on Practical Surgery at, St. Thomas's Hospital, and Chief Surgeon to the Metropolitan Police.

1862. MACKENZIE, MORELL, M.D., 19, Harley-street, W., Physician to the Hospital for Diseases of the Throat ; Lecturer on Diseases of the Throat at the London Hospital.

1880. MACKENZIE, STEPHEN, M.D., F.R.C.P., 26, Finsbury-square, E.C., Physician to, and Lecturer on Medicine at, the London Hospital. c 2.

1880. MACKRELL, ALFRED SEXTUS, 2, Manchester-square, W.

1881. MACLAGAN, THOMAS JOHN, M.D., M.R.C.P., 9, Cadogan-place, S.W., Physician in Ordinary to T.R.H. the Prince and Princess Christian of Schleswig-Holstein.

1881. MACLAREN, ALEXANDER CONNELL, 60, Harley-street, W.

1864. MACPHERSON, JOHN, M.A., M.D., 35, Curzon-street, Mayfair, W., Physician to the Scottish Hospital.

1887. MACREADY, JONATHAN FOSTER CHRISTIAN THORNE, F.R.C.S., Surgeon, City of London Hospital for Diseases of the Chest and Great Northern Central Hospital.

1883. MADDICK, EDMUND DISTIN, F.R.C.S. Edin., 2, Chandos-street, Cavendish-square, W.

1869. MAGILL, MARTIN, M.D., F.R.C.S., 6, Westbourne Park-road, W.

1878. MAIR, ROBERT SLATER, M.D., 28, Ledbury-road, Bayswater, W.

1887. MANTLE, ALFRED, M.D., Cromarty House, Stanley, Durham.

1883. MARGERISON, RICHARD, B.A., F.R.C.S., 15, Gloucester-street, Belgrave-road, S.W.

1873. MARSHALL, EDWARD, Mitcham, Surrey.

1859. MARSHALL, JAMES, M.D., 6, Rubislaw-place, Aberdeen. NS.

1869. MARSHALL, WILLIAM, M.D., Torrieburn, Barnes, S.W.

1864. MARSHALL, WILLIAM GURSLAVE, F.R.C.S., Medical Superintendent, Female Department, Asylum, Colney Hatch, N.

1884. MATHESON, FARQUHAR, M.B., 11, Soho-square, W., Surgeon to the Royal Ear Hospital, Frith-street, W.

1869. MATHEWS, ROBERT, Bickley, Kent. NS.

1871. MAURICE, OLIVER CALLEY, Reading, Surgeon to the Royal Berks Hospital. NS.

1850. MAY, WILLIAM COSTALL, 52, Tregunter-road, South Kensington, S.W.

1862. MAYBURY, AUGUSTUS KINGSTON, M.D., Holly Lodge, Richmond, Surrey, Consulting Physician to the Richmond Hospital. NS.

1884. MCGANN, TERENCE JOSEPH, Surgeon-Major, Madras Army.

1873. McHARDY, MALCOLM MACDONALD, F.R.C.S. Edin., 5, Savile-row, W., Professor of Ophthalmology in King's College, and Ophthalmic Surgeon to King's College Hospital.

1868. MCINTYRE, JOHN, M.D., Odiham, Hants. NS.

1884. MEREDITH, WILLIAM APPLETON, M.D., C.M., 6, Queen Anne-street, W., Surgeon to the Samaritan Free Hospital.

1874. MÉRIC, HENRY DE, 20, Charlotte-street, Portland-place, W., Assistant Surgeon to the French Hospital.

1864. MIDDLEMIST, ROBERT PERCY, 6, Devonport-street, Hyde-park, W. Councillor.

1858. MILLAR, JOHN, Medical Superintendent to the Bethnal House Asylum, Cambridge-road, E.

1881. MILLICAN, KENNETH WILLIAM, B.A., 58, Welbeck-street, Cavendish-square, W.

1878. MILNER, EDWARD, 32, New Cavendish-street, W., Surgeon to the Lock Hospital.

1882. MILLS, JOSEPH, 15, Henrietta-street, Cavendish-square, W., Administrator and Teacher of Anæsthetics to St. Bartholomew's Hospital.

1883. MONEY, ANGEL, M.D., 24, Harley-street, W., Assistant Physician to University College Hospital, and Assistant Physician to the Hospital for Children, Great Ormond-street.

1883. MOORE, THOMAS, F.R.C.S., 6, Lee-terrace, Blackheath, S.E.

1883. MORGAN, JOHN HAMMOND, M.A., F.R.C.S., 68, Grosvenor-street, W., Assistant Surgeon to Charing Cross Hospital, and to the Hospital for Sick Children. s 2.

1871. MORLEY, ALEXANDER, 42, Albemarle-street, W.

1881. MORRIS, HENRY, M.A., M.B., F.R.C.S., 2, Mansfield-street, Portland-place, W., Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital. c.

1878. MORRIS, MALCOLM ALEXANDER, F.R.C.S. Edin., 8, Harley-street, W., Surgeon to the Skin Department of, and Lecturer on Dermatology at, St. Mary's Hospital. c 2.

1882. MORTON, ANDREW STANFORD, M.B., C.M., 26, Weymouth-street, Portland-place, W., Senior Assistant Surgeon to the Royal South London Ophthalmic Hospital.

1884. \*MOULLIN, CHARLES WILLIAM MANSELL, M.A., M.D., F.R.C.S., 69, Wimpole-street, W., Assistant Surgeon to, and Lecturer on Comparative Anatomy at, the London Hospital.

1883. MOWAT, GEORGE, M.R.C.P. Edin., St. Albans.

1878. MUMFORD, WILLIAM LUGAR, M.D., 1, Bartlett's-passage, Holborn, E.C.

1886. MURPHY, JAMES, M.A., M.D., Holly House, Sunderland.

1884. MURRAY, FRED., B.A., M.B., Willowmore, Cape Colony, South Africa.

1886. MURRAY, HUBERT MONTAGUE, M.D., 27, Savile-row, W., School Lecturer on Practical Medicine at Charing Cross Hospital; Medical Physician to the Foundling Hospital.

1883. MURRAY, JAMES, M.D., 21, Weymouth-street, W., Physician to the Hospital for Diseases of the Heart.

1868. MURRAY, JOHN CARRICK, M.D., 44, Newgate-street, Newcastle-on-Tyne. ns.

1879. MURRELL, WILLIAM, M.D., F.R.C.P., 38, Weymouth-street, W., Assistant Physician to, and Lecturer on *Materia Medica* and Therapeutics at, the Westminster Hospital.

1885. MYERS, ARTHUR THOMAS, M.A. Cantab., M.D., 9, Lower Berkeley-street, W.

1873. MYERS, HENRY REYNOLDS, 30, Euston-square, N.W.

1868. NANKIVELL, CHARLES BENJAMIN, M.D., Ashby Lodge, Torquay, Senior Physician to the Consumption Hospital, Torquay. ns.

1877. NESBITT, DAWSON, M.D., 34, Cambridge-place, Hyde-park, W.

1880. NETHERCLIFT, WILLIAM HENRY, F.R.C.S., Junior Athenæum Club, Piccadilly, W.

1868. NEVINS, JOHN BIRKBECK, M.D., 3, Abercromby-square, Liverpool, Consulting Surgeon to the Ear and Eye Infirmary. ns.

1876. NEWHAM, JAMES, 16, Princes-street, Cavendish-square, W.

1880. NIX, EDWARD JAMES, M.D., 143, Great Portland-street, W.

1885. OGILVIE, LESLIE, M.B., 46, Welbeck-street, W., Physician to the Paddington Green Children's Hospital; Lecturer on Comparative Anatomy at the Westminster Hospital.

1884. OGLE, CHARLES JOHN, 36, Great Marlborough-street, W.

1871. OGLE, WILLIAM, M.A., M.D., F.R.C.P., Derby, Physician to the Derbyshire General Infirmary. NS.

1872. OGSTON, FRANCIS, M.D., 13, Albyn-terrace, Aberdeen, Emeritus Professor of Medical Logic and Medical Jurisprudence in the University of Aberdeen. NS.

1884. OLIVER, GEORGE, M.D., West End Park, Harrogate.

1881. ORAM, ARTHUR MURRAY, M.D., C.M., Sydney, N. S. Wales.

1875. ORD, WILLIAM MILLER, M.D., F.R.C.P., 43, Upper Brook-street, W., Physician to, and Lecturer on Medicine at, St. Thomas's Hospital, and Dean of St. Thomas's Medical School. P, c 3.

1884. ORWIN, ARTHUR WIGELSWORTH, M.D., 15, Weymouth-street, Portland-place, W., Surgeon to the Central London Throat and Ear Hospital.

1880. OSBORN, SAMUEL, F.R.C.S., 10, Maddox-street, Regent-street, W., Assistant Surgeon to the Hospital for Women, Soho-square, W.

1880. OSWALD, JAMES WADDELL JEFFREYS, M.D., 245, Kennington-road, S.E.

1883. OWEN, CHARLES J. RAYLEY, 14, Devonshire-terrace, W.

1878. \*OWEN, EDMUND, M.B., F.R.C.S., 49, Seymour-street, Portman-square, Surgeon to, and Lecturer on Anatomy at, St. Mary's Hospital; Surgeon to the Hospital for Sick Children. c 2, s 2, sm.

1881. OWEN, ISAMBARD, M.A., M.D., M.R.C.P., 5, Hertford-street, Mayfair, W., Assistant Physician to, and Lecturer on Materia Medica and Therapeutics at, St. George's Hospital. s 2, c 3.

1886. PAGET, STEPHEN, B.A. Oxon., F.R.C.S., 57, Wimpole-street, W.

1880. PALMER, FREDERICK STEPHEN, M.D., Compton Lodge, East Sheen, S.W.

1882. PALMER, WILLIAM PITT, College of Medicine, Newcastle-on-Tyne.

1877. \*PARAMORE, RICHARD, M.D., 2, Gordon-square, W.C.

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1867. PARKINSON, GEORGE, 50, Brook-street, Grosvenor-square, W., late Surgeon Dentist to, and Lecturer on Dental Surgery at, Charing Cross Hospital.

1880. PARKINSON, GEORGE WILLIAM, 36, Sackville-street, Piccadilly, W., Assistant Surgeon to the Dental Hospital of London.

1881. PARROTT, EDWARD JOHN, Hayes, Uxbridge, Middlesex.

1871. PARSONS, FRANCIS HENRY, M.D., C.M., "The Hurst," West Worthing.

1885. PASTEUR, WILLIAM, M.D., 19, Queen-street, Mayfair, W., Physician to the North Eastern Hospital for Children.

1872. PATTEN, CHARLES ARTHUR, Marpool House, Ealing, W.

1861. PAUL, JOHN HAYBALL, M.D., M.R.C.P., F.R.C.S., Camberwell House, Camberwell, S.E. c 6.

1854. PAVY, FREDERICK WILLIAM, M.D., F.R.C.P., F.R.S., 35, Grosvenor-street, W., Physician to, and late Lecturer on Medicine at, Guy's Hospital. *vp, ll, c.*

1881. \*PEACEY, WILLIAM, M.B., C.M., 214, Lewisham High-road, S.E.

1883. PECK, EDWARD GEORGE, M.A., 5, Hertford-street, Mayfair, W.

1871. PEDLER, GEORGE HENRY, 6, Trevor-terrace, Knightsbridge, S.W.

1869. PEMBERTON, OLIVER, F.R.C.S., J.P., 12, Temple-row, Birmingham, Senior Surgeon to the Birmingham General Hospital; Professor of Surgery in Queen's College. *ns.*

1883. PENNY, GEORGE TOWN, M.A., M.D., Stanley House, 3, Oakfield-road, Upper Tollington-park, N.

1883. PERRIGAL, ARTHUR, C.M., M.D., New Barnet.

1876. PHILLIPS, CHARLES DOUGLAS FERGUSON, M.D., M.R.C.P., 10, Henrietta-street, Cavendish-square, W., late Lecturer on *Materia Medica* and *Therapeutics* at the Westminster Hospital.

1873. PHILLIPS, GEORGE RICHARD TURNER, 24, Leinster-square, Hyde-park, W. *Councillor.*

1885. PHILLIPS, JOHN, B.A., M.B., 125, Harley-street, W., Senior Assistant Physician, Chelsea Hospital for Women; Physician to the British Lying-in Hospital.

1883. PHILLIPS, SIDNEY PHILIP, M.D. Lond., M.R.C.P., 21, Upper Berkeley-street, Portman-square, W., Physician to the Out-Patients, St. Mary's Hospital; Assistant Physician, London Fever Hospital.

1878. PHILLIPS, SUTHERLAND REES, M.D., M.Ch., St. Ann's Heath, Virginia Water.

1869. PHILIPSON, GEORGE HARE, D.C.L., M.D., M.A., F.R.C.P., J.P., 7, Eldon-square, Newcastle-on-Tyne, Professor of Medicine in the University of Durham, and Senior Physician to the Newcastle Infirmary. *ns.*

1875. PHILPOT, HARVEY JOHN, 74, Sutherland-avenue, Maida-vale, W.

1883. PICK, THOMAS PICKERING, F.R.C.S., 18, Portman-street, W., Surgeon to, and Lecturer on Surgery at, St. George's Hospital.

1884. PISSSE, C. H., F.I.C., F.C.S., 2, New Bond-street, W., Public Analyst, Strand District.

1883. PITTS, BERNARD, M.A., M.C., F.R.C.S., 31, Harley-street, Cavendish-square, Assistant Surgeon to, and Lecturer on Practical Surgery at, St. Thomas's Hospital, and Assistant Surgeon to the Children's Hospital, Great Ormond-street. *Honorary Secretary.*

1886. POCOCK, WALTER, Gwydyr House, 58, Brixton-hill, S.W.

1873. PORT, HEINRICH, M.D., M.R.C.P., 48, Finsbury-square, E.C., Physician to the German Hospital.

1850. POTTS, WILLIAM, F.R.C.S., 2, Albert-terrace, Regent's-park, N.W. *c 3.*

1868. POWELL, JOSIAH TAYLOR, M.D., 347, City-road, E.C.

1871. POWELL, RICHARD DOUGLAS, M.D., F.R.C.P., 62, Wimpole-street, W., Physician to the Middlesex Hospital and to the Hospital for Consumption, Brompton. *c 2, o. Councillor.*

1886. POWER, D'ANCY, M.A., M.B., F.R.C.S., 26, Bloomsbury-square, W.C., Curator of the Museum of St. Bartholomew's Hospital.

1884. PRENDERGAST, JOSEPH MORAN, M.D., C.M., 72, Rue de Villiers, Lavallois, Paris.

1869. PRICE, WILLIAM PRESTON, M.D., 1, Ethelbert-crescent, Margate, Surgeon to the Royal Margate Infirmary. NS.

1885. PRINGLE, JOHN JAMES, M.B., M.R.C.P., 35, Bruton-street, Berkeley-square, W., Assistant Physician to the Middlesex Hospital; Physician to the Royal Hospital for Diseases of the Chest.

1869. PRIOR, CHARLES EDWARD, M.D., F.R.C.S., St. Peter's, Bedford, Coroner for Bedford. NS.

1884. PROTHEROE, JOHN, *Travelling*.

1886. PROWSE, WILLIAM BYASS, 2, Apsley-villas, Acton, W.

1886. PULLIN, FRANK BINGLEY, 5, Cambridge-park, Guernsey.

1873. PURCELL, FERDINAND ALBERT, M.D., M.Ch., 7, Manchester-square, W., Surgeon to the Cancer Hospital, Brompton.

1878. PYE, WALTER, F.R.C.S., 4, Sackville-street, Piccadilly, W., Surgeon to, and Lecturer on Physiology at, St. Mary's Hospital. *Councillor*.

1882. PYLE, THOMAS THOMPSON, M.D., J.P., 5, Lower Seymour-street, W.

1870. QUAIN, RICHARD, M.D., F.R.C.P., F.R.S., 67, Harley-street, W., Consulting Physician to the Hospital for Consumption, Brompton. VP, c 3.

1883. RALFE, CHARLES HENRY, M.A., M.D., F.R.C.P., 26, Queen Anne-street, W., Assistant Physician to the London Hospital.

1861. RAMSKILL, JABEZ SPENCE, M.D., M.R.C.P., 5, St. Helen's-place, E.C., Consulting Physician to the London Hospital.

1881. RANKING, JOHN EBENEZER, M.A., M.D., M.R.C.P., Hanover House, Physician to the Tunbridge Wells Infirmary.

1859. \*RAYNER, JOHN, M.R.C.P. Edin., Swaledale House, Highbury-quadrant.

1850. READ, REGINALD, F.R.C.P. Edin., 1, Guildford-place, W.C. c 2.

1879. REEVES, HENRY ALBERT, F.R.C.S. Edin., 6, Grosvenor-street, W., Assistant Surgeon to, and Teacher of Practical Surgery at, the London Hospital.

1882. REID, THOMAS WHITEHEAD, F.R.C.P. Edin., 34, St. George's-place, Canterbury, Surgeon to the Kent and Canterbury Hospital.

1887. REMFRY, LEONARD, M.B., The Grange, Nightingale-lane, S.W.

1872. REYNOLDS, JOHN RUSSELL, M.D., F.R.C.P., F.R.S., 38, Grosvenor-street, W., Physician in Ordinary to H.M.'s Household; Emeritus Professor of the Principles and Practice of Medicine in University College; Consulting Physician to University College Hospital. c 3.

1872. RICHARDS, JOSEPH PEEKE, Medical Superintendent, Female Department, County Asylum, Hanwell, W. *Councillor*.

1850. RICHARDSON, BENJAMIN WARD, M.A., M.D., LL.D., F.R.C.P., F.R.S., 25, Manchester-square, W. p, vp, ll, c 5, o, fm 1854.

1882. RING, EDMUND CUTHBERT, 55, New Bond-street, W.

1830. ROBARTS, HENRY PRATT, F.R.C.S., 31, Great Coram-street, W.C. vp 2, s 9, c 10, fm 1844, sm.

1869. ROBERTS, BRANSBY, M.D., Badlesmere House, Eastbourne. ns.

1868. \*ROBERTS, DAVID LLOYD, M.D., F.R.C.P., F.R.S.E., 11, St. John's-street, Manchester, Physician to St. Mary's Hospital, Manchester.

1857. ROBERTS, DAVID WATKIN, M.D., 56, Manchester-street, W.

1885. ROBERTS, EDWARD COLERIDGE, Southgate, N.

1874. ROBERTS, FREDERICK THOMAS, M.D., B.Sc., F.R.C.P., 102, Harley-street, W., Physician and Professor of Clinical Medicine to University College Hospital; Professor of Materia Medica and Therapeutics in University College; Physician to the Hospital for Consumption, Brompton.

1880. ROBERTS, WILLIAM. *Travelling.*

1873. ROBERTSON, WILLIAM HENRY, M.D., F.R.C.P., J.P., Buxton, Derbyshire, Consulting Physician to the Devonshire Hospital and Buxton Bath Charity.

1884. ROBINSON, ARTHUR HENRY, M.D., Mile End Infirmary.

1877. ROECKEL, WALDEMAR JOSEPH, M.B., B.S., F.R.C.S., 12, Upper Berkeley-street, W., Surgeon to the National Orthopaedic Hospital; Surgical Registrar to the Charing Cross Hospital.

1869. RODEN, WILLIAM, M.D., F.R.C.S., Kidderminster. ns.

1869. ROGERS, CHARLES EDWARD HERON, Retford, Notts. ns.

1874. ROGERS, WILLIAM RICHARD, M.D., C.M., M.R.C.P., 56, Berners-street, W., Consulting Physician to the Samaritan Free Hospital. vp, c 6.

1886. ROSE, ROBERT DUNCAN, F.R.C.S., St. Leonard's-place, York.

1874. ROSE, WILLIAM, M.B., B.S., F.R.C.S., 50, Harley-street, Surgeon to King's College Hospital, and to the Royal Free Hospital.

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1848. ROUTH, CHARLES HENRY FELIX, M.D., M.R.C.P., 52, Montagu-square, W., Consulting Physician to the Samaritan Free Hospital. p, vp 2, s 4, c 6, sm. *Trustee.*

1886. RUTHERFORD, HENRY TROTTER, B.A. Camb., M.D., 46, Queen Anne-street, W.

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1884. SALTER, THOMAS KNIGHT, 23, Lower Seymour-street, W.

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1863. \*SANSOM, ARTHUR ERNEST, M.D., F.R.C.P., 84, Harley-street, W., Physician to, and Lecturer on Medical Jurisprudence at, the London Hospital; Senior Physician to the North Eastern Hospital for Children. VP, s 2, c 4, SM, § 11.

1886. SAVAGE, GEORGE HENRY, M.D., F.R.C.P., Medical Superintendent at, and Resident Physician to, the Bethlehem Royal Hospital, S.E.

1886. SAVILL, THOMAS DIXON, M.D., Paddington Infirmary, W.

1873. SCOTT, WILLIAM, M.D., M.R.C.P., Waverley House, Huddersfield, Senior Physician to the Huddersfield Infirmary.‡

1873. SEDGWICK, JAMES, M.D., Boroughbridge, Yorkshire.

1868. SEDGWICK, LEONARD WILLIAM, M.D., 2, Gloucester-terrace, Hyde-park, W. VP 2, c 4, § 3.

1883. SEMON, FELIX, M.D., F.R.C.P., 38, Wimpole-street, W., Assistant Physician in charge of the Throat Department, St. Thomas's Hospital. *Honorary Secretary for Foreign Correspondence.*

1869. SEMPLE, ROBERT HUNTER, M.D., F.R.C.P., 8, Torrington-square, W.C., late Physician to the Hospital for Diseases of the Throat. c.

1887. SERVAIS, A. M., M.D., Antwerp, Belgium.

1876. SEWELL, CHARLES BRODIE, M.D., 21, Cavendish-square, W. c.

1884. SHAW, JOHN, M.D., Burlington House, Willoughby-road, Hampstead, N.W., Physician to the North London Hospital for Consumption; Senior Physician to the North London Hospital.

1886. SHEILD, ARTHUR MARMADUKE, M.B., F.R.C.S., 22, Somerset-street, Portman-square, W., Assistant Surgeon and Lecturer on Minor Surgery at Westminster Hospital.

1871. SHETTLE, RICHARD CHARLES, M.D., 73, London-street, Reading, Physician to the Royal Berkshire Hospital. ns.

1881. SHIPTON, ARTHUR, Buxton, Derbyshire, Hon. Medical Officer to the Devonshire Hospital.

1878. SHIPTON, WILLIAM PARKER, Buxton, Derbyshire, Consulting Surgeon to the Devonshire Hospital.

1885. SHOEMAKER, JOHN V., 1031, Walnut-street, Philadelphia, U.S.A.

1867. \*SIMMS, FREDERICK, M.B., M.R.C.P., 6, Mandeville-place, Manchester-square, W. c 2.

1884. SIMPSON, JAMES HERBERT, M.D., C.M., The Crescent, Rugby, Warwickshire, Medical Officer, Rugby Hospital.

1884. SINCLAIR, JOHN, General Post Office, St. Martin's-le-Grand, E.C.

1883. \*SKERRITT, EDWARD MARKHAM, M.D., B.S., F.R.C.P., B.A., Richmond Hill, Clifton, Senior Physician to the Bristol General Hospital; Dean and Lecturer on Medicine and Pathology in the Bristol Medical School.

1886. SLATER, CHARLES, M.A., M.B., 16, Northwick-terrace, St. John's Wood, N.W.

1862. SLIGHT, GEORGE, M.D., 3, Clifford-street, Bond-street, W. c 2.

1871. SLOMAN, SAMUEL GEORGE, Farnham. ns.

1845. SMILES, WILLIAM, M.D., St. Martha's Lodge, Guildford. VP 2, s 4, c 9, sm.

1887. SMITH, FREDERICK JOHN, B.A., 7, West-street, City, E.C.

1848. \*SMITH, HENRY, F.R.C.S., 83, Wimpole-street, W., Professor of Surgery in King's College, and Surgeon to King's College Hospital. P, VP, LL, o, c 3.

1882. SMITH, HERBERT, Urmson, Oudtshorne, Cape of Good Hope, South Africa.

1873. SMITH, HEYWOOD, M.A., M.D., M.R.C.P., 18, Harley-street, W., Physician to the Hospital for Women and the British Lying-in Hospital. c 3.

1884. SMITH, MONTAGU, 26, York-place, Cheltenham.

1880. SMITH, NOBLE, F.R.C.S. Edin., 24, Queen Anne-street, W.

1877. SMITH, SYDNEY LLOYD, 25, Argyle-square, King's Cross, W.C.

1882. SMITH, THOMAS FREDERICK HUGH, F.R.C.S., Farningham, Kent.

1873. \*SMITH, THOMAS GILBART, M.A., M.D., F.R.C.P., 68, Harley-street, W., Assistant Physician to the London Hospital; Physician to the Royal Hospital for Diseases of the Chest. s 2, sm, c 3. *Councillor.*

1872. SMITH, WALTER, M.R.C.P. Edin., 2, Stanhope-terrace, Gloucester-gate, Regent's-park, N.W.

1874. SMYTH, WILLIAM WOODS, Maidstone.

1869. SPENDER, JOHN KENT, M.D., 17, Circus, Bath, Physician to the Mineral Water Hospital. FM 1874.

1883. SPITTA, EDMUND JOHNSON, Ivy House, Clapham-common, S.W.

1864. SQUIRE, ALEXANDER JOHN BALMANNO, M.B., 24, Weymouth-street, Portland-place, Surgeon to the British Hospital for Diseases of the Skin.

1881. STARTIN, JAMES, 17, Sackville-street, W.

1869. STEAR, HENRY, Saffron Walden, Essex, Senior Surgeon to the Saffron Walden Hospital. NS.

1869. STEDMAN, JAMES REMINGTON, M.D., F.R.C.S., J.P., Guildford, Surrey, Consulting Surgeon to the Royal Surrey County Hospital. NS.

1884. STEPHENS, WILLIAM JOHN, 41, Grand Parade, Brighton, Physician to the Brighton and Hove Dispensary.

1882. STEWART, JAMES, B.A., M.R.C.P. Edin., Dunmurry, Sneyd-park, Clifton.

1883. STEWART, WILLIAM ROBERT HENRY, F.R.C.S., 41, Devonshire-street, Portland-place, W., Surgeon to the North-West London Hospital.

1884. STIVEN, EDWARD WINNAN FLEMING, M.D., C.M., Lincoln House, Harrow, Middlesex.

1885. STIVENS, B. H. LYNE, M.D., 11, Kensington Gardens-square, W.

1848. \*STOCKER, JOHN SHERWOOD, M.D., M.R.C.P., 2, Montagu-square, W. c 10, s 2.

1884. STOKER, GEORGE, 25, Old Burlington-street, W.

1877. STOWERS, JAMES HERBERT, M.D., 23, Finsbury-circus, E.C., Physician to the Department for Skin Diseases, North-West London Hospital; Consulting Physician to the Stockwell Orphanage.

1873. STRANGE, WILLIAM HEATH, M.D., C.M., 5, Grosvenor-street, W.

1881. STURGE, WILLIAM ALLEN, M.D., M.R.C.P., 9, Rue Longchamp, Nice. SM.

1876. \*SUTHERLAND, HENRY, M.A., M.D., M.R.C.P., 6, Richmond-terrace, Whitehall, S.W., Lecturer on Insanity at the Westminster Hospital.

1880. SWEETING, RICHARD DEANE ROKER, Medical Superintendent, Western District Fever Hospital, Fulham, S.W.

1885. \*SYERS, HENRY WALTER, M.A. Camb., M.D., Medical Registrar, Westminster Hospital.

1881. SYKES, EDWIN JOHN, M.B., C.M., York House, Tottenham.

1883. SYKES, JOHN FREDERICK JOSEPH, B.Sc., M.B., C.M., 171, Camden-crescent, N.W., Medical Officer of Health for St. Pancras District.

1886. SYMONDS, CHARTERS JAMES, M.D., 26, Weymouth-street, Portland-place, Assistant Surgeon, Guy's Hospital; Surgeon to the Out-Patients, Evelina Hospital for Children.

1884. SYMONDS, HORATIO PERCY, F.R.C.S., 35, Beaumont-street, Oxford, Surgeon to the Radcliffe Infirmary.

1885. TADLOCK, A. B., M.A., M.D., Knox Villa, Tennessee, U.S.A.

1864. TAIT, EDWARD WILMSHURST, 54, Highbury-park, N.

1879. \*TAIT, LAWSON, F.R.C.S., 7, The Crescent, Birmingham, Surgeon to the Birmingham and Midland Hospital for Women.

1875. TAMPLIN, CHARLES HARRIS, 44, Royal-road, Ramsgate.

1869. TAYLOR, CHARLES BELL, M.D., Nottingham, Honorary Surgeon to the Nottingham and Midland Eye Infirmary. NS.

1882. TAYLOR, SEYMOUR, M.D., C.M., M.R.C.P., 16, Seymour-street, Portman-square, W., Physician to the North London Hospital for Consumption; Demonstrator of Anatomy at St. Thomas's Hospital.

1884. TAYLOR, SYDNEY HAMILTON, M.D., 7, Park-avenue, Willesden-park, N.W.

1863. TEEVAN, WILLIAM FREDERICK, B.A., F.R.C.S., Mostyn Villa, Brockman-road, Folkestone. VP, LL, O, C 3.

1858. THANE, GEORGE DANCER, M.D., 15, Montague-street, Russell-square, W.C.

1859. THOMPSON, EDMUND SYMES, M.D., F.R.C.P., 33, Cavendish-square, W., Senior Physician to the Hospital for Consumption, Brompton; Gresham Professor of Medicine. VP, O, S 3, C 3, SM.

1855. THOMPSON, SIR HENRY, M.B., F.R.C.S., F.R.S., 35, Wimpole-street, W., Consulting Surgeon to University College Hospital; Emeritus Professor of Clinical Surgery in University College.

1873. THOMSON, JOHN ROBERTS, M.D., F.R.C.P., Bournemouth, Hants.

1884. THOMSON, WILLIAM SINCLAIR, M.D., C.M., F.R.C.S., 4, Ladbroke-grove, Kensington-park-gardens, W.

1876. THORNTON, JOHN KNOWSLEY, M.B., M.C., 22, Portman-street, W., Surgeon to the Samaritan Free Hospital. Vice-President.

1867. THOROWGOOD, JOHN CHARLES, M.D., F.R.C.P., 61, Welbeck-street, W.  
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1856. THUDICHUM, JOHN WILLIAM LOUIS, M.D., F.R.C.P., 11, Pembroke-gardens, Kensington, W. VP, LL, O, C.

1884. THURSFIELD, THOMAS WILLIAM, M.D., M.R.C.P., J.P., 26, The Parade, Leamington, Physician to the Warneford and South Warwickshire General Hospital.

1876. TIBBITS, HERBERT, M.D., 68, Wimpole-street, W., Senior Physician to the West End Hospital for Diseases of the Nervous System.

1867. TIMMS, GODWIN WILLIAM, M.D., M.R.C.P., 9, Wimpole-street, W., late Senior Physician to the North London Hospital for Consumption.

1836. TOWNLEY, JAMES, F.R.C.S., 302, Kennington-park-road, S.E. c 3.

1865. TRAVERS, WILLIAM, M.D., F.R.C.S., 2, Phillimore-gardens, Kensington, Assistant Physician to the Chelsea Hospital for Women.

1884. \*TREVES, FREDERICK, F.R.C.S., 6, Wimpole-street, W., Surgeon to, and Lecturer on Anatomy at, the London Hospital ; Hunt Professor of Anatomy, R.C.S. England. c 2.

1882. TUKE, CHARLES MOLESWORTH, 37, Albemarle-street, W.

1868. TUKE, THOMAS HARRINGTON, M.D., F.R.C.P., 37, Albemarle-street, W. c 2.

1886. TUKE, THOMAS SEYMOUR, B.A. Oxon, 37, Albemarle-street, W.

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1883. TWEEDY, JOHN, F.R.C.S., 100, Harley-street, W., Professor of Ophthalmic Surgery in University College ; Surgeon to the Royal Ophthalmic Hospital.

1878. VASEY, CHARLES, 5, Cavendish-place, W., late Dental Surgeon to, and Lecturer on Dental Surgery at, St. George's Hospital.

1886. VEALE, HENRY RICHARD LORD, M.D. (Dep. Surgeon-General) 26, Claverton-street, S.W.

1883. VENNING, EDGCOMBE, F.R.C.S., 30, Cadogan-place, S.W., late Surgeon 1st Life Guards.

1874. VERLEY, REGINALD LOUIS, F.R.C.P. Edin., 28B, Devonshire-street, Portland-place, W.

1850. WAGGETT, JOHN, M.D., F.R.C.S., Union Club, S.W., and Bournemouth.

1884. WAKLEY, THOMAS, 96, Redcliffe-gardens, South Kensington, S.W.

1850. WAKLEY, THOMAS HENRY, F.R.C.S., 96, Redcliffe-gardens, South Kensington, S.W., Consulting Surgeon to the Royal Free Hospital.

1869. WALKER, JOHN SWIFT, M.D., Hanley, Staffordshire. NS.

1880. WALSHAM, WILLIAM JOHNSON, M.B., C.M., F.R.C.S., 27, Weymouth-street, W., Assistant Surgeon to, and Demonstrator of Practical Surgery at, St. Bartholomew's Hospital. C.

1881. WARNER, FRANCIS, M.D., F.R.C.P., F.R.C.S., 24, Harley-street, W., Assistant Physician to, and Lecturer on Botany at, the London Hospital; Assistant Physician to the East London Hospital for Children.

1883. WATERHOUSE, WILLIAM DAKIN, LL.D., 18, Woodchurch-road, West Hampstead, N.W.

1872. WATERS, JOHN, 41, Bloomsbury-square, W.C.

1868. WATKINS, CHARLES STUART, 16, King William-street, Strand, W.C.

1863. WATSON, WILLIAM SPENCER, M.B., F.R.C.S., 7, Henrietta-street, Cavendish-square, W., Surgeon to the Royal South London Ophthalmic Hospital, and to the Great Northern Hospital. c.

1881. WATTEVILLE, ARMAND DE, M.D., M.A., B.Sc., 30, Welbeck-street, Physician-Electro-Therapeutist to St. Mary's Hospital.

1884. WEBB, CHARLES LOUIS (Waimate, Canterbury, New Zealand), Walton-on-Thames.

1884. WEBB, F. ERNEST, 113, Maida-vale, W.

1869. WEBSTER, FREDERICK RICHARD, St. Albans, Herts. ns.

1887. WEBSTER, HENRY WILLIAM, M.D., Medical Superintendent St. George's Infirmary, Fulham-road, S.W.

1882. WELLS, CHARLES, M.D., 13, College-crescent, Belsize-park, N.W.

1838. WELLS, JOHN ROBINSON, F.R.C.S., 20, Fitzroy-street, W. c 2.

1873. WELSH, JOSEPH, Knighton, Radnorshire.

1884. WEST, SAMUEL, M.D., F.R.C.P., 15, Wimpole-street, W., Assistant Physician to St. Bartholomew's Hospital; Physician to the City of London Hospital for Diseases of the Chest; Physician to the Royal Free Hospital. *Honorary Secretary.*

1882. WHIPHAM, THOMAS T., M.A., M.B., F.R.C.P., 11, Grosvenor-street, W., Physician to, and Lecturer on Pathology and Practical Medicine at, St. George's Hospital. sm.

1884. WHISTLER, WILLIAM MACNEILL, M.D., M.R.C.P., 28, Wimpole-street, W., Physician to the Hospital for Diseases of the Throat and Chest.

1868. WHITE, JOSEPH, F.R.C.S. Edin., Oxford-street, Nottingham, Consulting Surgeon to the Nottingham General Hospital.

1880. \*WHITE, WILLIAM HENRY, M.A., M.D., M.Ch., M.R.C.P., 43, Weymouth-street, W., Pathologist and Assistant Physician to the Royal Hospital for Diseases of the Chest. c 3.

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1885. WHITLA, WILLIAM, M.D., 8, College-square North, Belfast, Ireland, Examiner in Materia Medica and Botany to the Pharmaceutical Society, Ireland; Physician, Belfast Royal Hospital; Consulting Physician, Ulster Hospital for Diseases of Women and Children.

1877. WHITMORE, WILLIAM TICKLE, 7, Arlington-street, Piccadilly, W.

1868. WIBLIN, JOHN, F.R.C.S., Southampton. ns.

1862. WILLETT, EDMUND SPARSHALL, M.D., M.R.C.P., 4, Suffolk-place, Pall Mall, S.W. c 3.

1872. WILLIAMS, CHARLES THEODORE, M.A., M.D., F.R.C.P., 2, Upper Brook-street, Grosvenor-square, W., Physician to the Hospital for Consumption, Brompton. VP, LL, S 2, SM 2, o, LC 3. *Councillor.*

1876. WILLIAMS, HENRY WILLIAM, M.D., C.M., 7, Chapel-place, Cavendish-square, W.

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1881. WILLS, CALEB SHERA, C.B., 3, Victoria-road, Wincheap, Canterbury, Brigade Surgeon, Army Medical Department.

1873. WILLS, THOMAS MUNNS, F.R.C.S.I., 44, Merton-road, Bootle, Liverpool, Honorary Surgeon to the Bootle Borough Hospital.

1884. WINSLOW, H. FORBES, M.D., 14, York-place, Portman-square, W.

1873. WINSLOW, LYTTLETON STEWART FORBES, D.C.L., LL.M., M.B., M.R.C.P., 7, Manchester-square, W., Lecturer on Mental Diseases at Charing Cross Hospital. c.

1876. WOAKES, EDWARD, M.D., 78, Harley-street, W., Senior Aural Surgeon to, and Lecturer on Aural Surgery at, the London Hospital.

1882. WOLFENDEN, RICHARD NORRIS, B.A., M.D., 19, Upper Wimpole-street, W., Senior Physician to the Hospital for Diseases of the Throat.

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1886. WORDSWORTH, WILLIAM JOHN, 20, Harley-street, W.

1886. WOOD, T. OUTTERSON, M.D., F.R.C.P., 40, Margaret-street, Cavendish-square, W.

1884. WYMAN, WILLIAM SANDERSON, M.D., F.R.C.S., Westlands, Upper Richmond-road, Putney, S.W. *Councillor.*

1884. YEO, I. BURNEY, M.D., F.R.C.P., 44, Hertford-street, Mayfair, W. Professor of Physiology at King's College Hospital, and Examiner in Physiology at the Royal College of Surgeons and the University College.

1884. YOUNGER, EDWARD GEORGE, M.D., M.R.C.P., County Asylum, Hanwell, Assistant Medical Officer, Middlesex Lunatic Asylum.

\*\*\* As it is very desirable that the List of Members should be kept as accurate as possible, Fellows are requested to send notice of any corrections that may be necessary to the Secretaries or to Mr. Poole.

## GENERAL MEETING.

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*March 7th, 1887.*

R. BRUDENELL CARTER, Esq., F.R.C.S., President, in the Chair.

*Annual Report of the Council of the Medical Society, presented to the General Meeting, March 7th, 1887.*

IN presenting their annual report, the Council finds much satisfaction in congratulating the Fellows of the Society upon a year of continued prosperity and useful work and a considerable increase of numbers.

Thirty-eight new Fellows have been elected, and the total number of subscribing Fellows now amounts to 536, an increase of twenty-five on the previous year, this being exclusive of those who have compounded for their subscriptions and of the Honorary Fellows.

The Society has to regret the loss by death of nine Fellows, three of whom had rendered it loyal and important services.

Mr. Francis Mason had filled every office, including the Presidency, and throughout the twenty-five years of his Fellowship had given his best and warmest energies to the Society, which loses in him a constant and generous supporter. The Council conveyed their sense of this sad loss in a letter addressed to his widow, to which they received a most grateful reply. Both these letters have been entered upon the minutes.

Dr. Alfred Wiltshire, besides holding many other offices, served the Society with zeal and efficiency as its Treasurer until compelled to resign by failing health.

Hutchinson Royes Bell, a Fellow for twenty years, had filled many offices, including that of Vice-President, and was a constant attendant at the meetings.

Besides these, Mr. J. Sampson Gamgee, Dr. Vincent Ambler, Dr. Hugh W. Diamond, Dr. George Kitching, Dr. Joseph Seaton, and Dr. A. Wynn Williams have been removed by death. Four Fellows have resigned.

The financial condition of the Society is most satisfactory, and the Council offers its thanks and congratulations to the able and active Treasurer, Mr. A. E. Durham. Two bonds have been paid off during the past year.

The thanks of the Council are also due to Mr. Goodsall, who has again presided over the House and Finance Committee.

The meeting room has been repainted and decorated under the direction of the architect, Mr. H. Cowell Boyes.

In pursuance of the plan successfully followed last year, the discussions have been regularly reported, and will again appear in the printed volume of the Proceedings. The Council desire to express their thanks to Mr. C. L. Hudson for the able manner in which these reports have been furnished.

The Lettsomian Lectures were delivered by Dr. Langdon Down, and admirably sustained the reputation of the Society and of the Lecturer.

The Society has been fortunate in securing the services of Sir William MacCormac to deliver the annual Oration.

The earnest labours of Dr. Allchin in continuing the work of forming a catalogue of the Library deserve the best thanks of the Council and of the Society.

Only one essay was sent in for the Fothergillian Gold Medal, and the Committee did not consider it deserving of the award.

*The Honorary Librarian's Report. March, 1887.*

I HAVE the honour to report to the Society that during the past year I have arranged the Periodicals, and am now engaged in cataloguing them. I regret to say that for the most part the condition of the older volumes is as unsatisfactory as I have been previously obliged to report in connection with the other works already arranged.

There still remain for arrangement the works published previous to A.D. 1700, and the Pamphlets, and it is much to be desired that the Council will see its way to give effect to the resolution already adopted in regard to the disposal of these valuable volumes, at least so far as concerns the books of the 16th century.

The liberality with which the Society has furnished wall space for the Royal Historical and Ophthalmological Societies has resulted in bringing the Library nearly to the limits of its available capacity, and the further accommodation of our own volumes will soon become a question of urgency. The arrangement in the large room of the older works will no doubt for a time meet the difficulty.

There have been added to the Library during the past year—

3 books purchased by the Fothergillian Fund ;

36 books presented by authors, publishers, or editors ;

42 books by Fellows of the Society, among whom I would especially mention Sir R. Bennett, Dr. Brunton, Mr. Gould, and Dr. Coup-land ;

Also a number of pamphlets and periodicals.

The Library is being increasingly used by the Fellows, both for reference and the borrowing of books, and I have to express my regret that several applications for the loan of the older books I have been unable to comply with, owing to the present inaccessibility of those volumes.

The Society is much indebted to the excellent services of Mr. Poole, who has always been most willing, at the cost of much personal inconvenience, to spare what time he could take from the overwhelming duties of his office to the special work of Librarian.

And I would again thank the Society for the honour done me in re-electing me to my office.

W. H. ALLCHIN,  
*Honorary Librarian.*

THE MEDICAL SOCIETY OF LONDON.—BALANCE SHEET, 1886-87.

RECEIPTS.		PAYMENTS.			
1886	To Balance from last Account .	57	10	9	1886
	” Subscriptions and Arrears .	467	4	0	By Rent, Gas, Coals, Rates, Taxes, and Insurance .
	” Entrance Fees .	30	9	0	” Library Expenses .
	” Life Compositions .	10	10	0	” Decoration of Meeting Room and other repairs .
	” Rents .	762	5	4	” Conversazione, cost of
	” Contributions for use of Rooms .	50	13	0	” Salaries of Registrar, Reporter, and Collector’s poundage .
	” Donation—The President, Mr. Carter (for flowers for Conversazione) .	5	0	0	” Stationery and Printing (including the cost of Vol. IX of the Society’s Proceedings)
	” Reimbursement by Tenant .	2	2	0	” Postage (including the cost of issuing and delivering Vol. IX)
1887	Feb. 1				” Interest on Debenture Bonds .
					” Repayment of No. 16 Bond .
					” Wages .
					” Miscellaneous Expenditure, Refreshments at Meetings, Chandlery, and Cleaning .
					” Balance in Registrar’s hands 3 5 11
					” Ditto at Bankers 146 15 7
					150 1 6
					£1385 14 1

LVI

(Signed) ARTHUR E. DURHAM, Treasurer.

Examined, compared with the vouchers, and found correct,

CHARLES J. HARE, } *Auditors.*  
ISAAC BARD OWEN.

22nd February, 1887.

PROCEEDINGS  
OF THE  
MEDICAL SOCIETY OF LONDON.  
114TH SESSION.

*October 18th, 1886.*

OPENING ADDRESS.

By the President, R. BRUDENELL CARTER, Esq., F.R.C.S.

GENTLEMEN,

At the commencement of this, the 114th Session of the Society, I have the pleasure of welcoming you with the assurance of our continued and increasing prosperity. Our numbers are well maintained; the attendance during the last session, and the character of the papers and discussions which occupied our evenings, have not been surpassed during any previous period; and the state of our finances is entirely satisfactory. Our meeting room, as you will see, has been at least partially re-decorated; and it is the intention of the Council that this decoration shall be completed during the next recess. In the circular letter which I have addressed to the Fellows I have dwelt upon the importance and value of the clinical evenings, which during the coming session will be held on the last Monday of each month; and I have mentioned the desire of our honorary librarian to obtain spare copies of any pamphlets which can be placed at his disposal. I hold in my hand the new volume of our Proceedings, which contains, for the first time, abstracts of our discussions furnished by a professional reporter. The insertion of these abstracts has rendered it necessary somewhat to diminish the size of type employed; and, mainly for this reason, the volume is slightly less bulky than its immediate predecessor.

In a Society so numerous as ours, it would be impossible that we could re-assemble after a vacation without having to regret

some losses; and, since our last meeting, those losses have been very grievous; not, indeed, numerically, but on account of the eminence and the comparative youthfulness of those who have been taken away. The first of them, whose memory will at once recur to every one of my audience, was Francis Mason; a man admired by all as a surgeon, and whom many of those present are privileged to deplore as a friend. He had filled all the important offices of the Society, had been Councillor, Secretary, Orator, Lettsomian Lecturer, Vice-President, Treasurer, a Silver Medallist, and finally crowned his career of usefulness and distinction amongst us by filling, most worthily, the Presidential chair. It is superfluous to say, after this brief enumeration of the capacities in which he worked for us, that he was a warm friend to the Society, ready to promote its interests in every direction in which his influence could be exerted. It would be equally superfluous, in this room, for me to dwell on his professional merits. A favourite pupil of Sir William Fergusson, he became Assistant-Surgeon to King's College Hospital, and surrendered that office in order to accept a full surgeoncy at the new St. Thomas's, where he displayed conspicuous skill as a surgeon, and corresponding ability and success as a teacher. His death occurred on the 5th of June, after a short illness, from some affection of the throat for which tracheotomy was performed in vain, and when he was but in the 49th year of his age. In accordance with a resolution of the Council, a letter of condolence was addressed to Mrs. Mason, by myself and the Secretaries, in the name of the Society; and that letter, together with Mrs. Mason's reply, which I will read to you, have been entered upon our minutes:

5, Brook Street, Grosvenor Square, W.,  
July 16, 1886.

DEAR MR. BRUDENELL CARTER,

In acknowledging your very kind letter, allow me to offer to you, Mr. Morgan, Dr. West, and also to the Council of the Medical Society of London and general body of the Fellows, my most sincere and heartfelt thanks for the sympathy that has been shown to me.

I assure you that it was with feelings of pride I read your kind expressions of my husband's worth, and of his use as an Officer of the Medical Society, in which he took such interest, and whose prosperity he had so much at heart.

With grateful thanks,

Believe me yours faithfully,

JANE MASON.

The next name on our list of deaths is that of Hutchinson Royes Bell, who died suddenly on the 15th of June, only ten days after Francis Mason. Royes Bell also was educated at King's College, and was Surgeon to the Hospital at the time of his decease. In this Society he had filled the offices of Councillor, Secretary, Librarian, Lettsomian Lecturer, and Vice-President, besides having been the recipient of a silver medal. He was a man of singularly modest and retiring character, but an excellent surgeon and an admirable teacher, and was much beloved and respected by all who knew him well.

The third gap in our ranks has been caused by the death of Joseph Sampson Gamgee, who became a Fellow of the Society in 1882, when he was already settled in Birmingham, and who has not filled any of our offices. Mr. Gamgee was a man of very unusual gifts and attainments. He was educated at University College, and completed his studies at Paris, Pavia, and Florence. Returning to London, he became Assistant-Surgeon to the Royal Free Hospital, but was induced to remove to Birmingham, where he was appointed Surgeon to the Queen's Hospital, and soon rendered himself conspicuous as a bold, skilful, and successful operator. Boldness and skill, the boldness to plan a difficult and hazardous operation, and the skill to perform it, may perhaps be regarded somewhat in the light of natural qualities or gifts, which do not of absolute necessity tend to the advantage of the patient; but, when these qualities are combined with success, we may be sure that they are guided by adequate knowledge and by sound discretion. As one illustration of the character of Mr. Gamgee's work, I may remind you of the man who sought his assistance on account of an enormous cancellous tumour of one femur. This man had been dismissed from more than one hospital as incurable, but Mr. Gamgee amputated the diseased limb at the hip-joint, and saved him. The patient was so much emaciated that I believe I in no way exaggerate the facts when I say that Mr. Gamgee divided him into two unequal parts, the smaller of which got well. Mr. Gamgee was no less capable as an organiser than as a surgeon, and he succeeded not only in effecting great improvements in the arrangements of his hospital, but in the still more difficult task of inducing the artisans of Birmingham to contribute liberally to its support. He was also active as a medical politician but, inasmuch as the amount of observation and reflection which I

have been able to bestow on the public affairs of the profession has always led me to conclusions which were diametrically opposed to his, it will perhaps be better that I should not pursue this part of the question. I can at least bear testimony to the ability and fairness with which his views were advanced and defended. His death occurred on the 15th of September, in consequence of injuries sustained in an accidental fall.

The last name which I have to mention is that of Dr. Seaton, of Halliford House, Sunbury, a corresponding Fellow. Dr. Seaton was somewhat advanced in life, and had been chiefly, or even entirely, engaged in the treatment of the insane. I do not remember to have seen him in our meeting room, but he was well known to the profession in London, and was of conspicuously genial and kindly disposition.

And now, gentlemen, if I turn away from the consideration of our losses to contemplate the work of the Society, either in retrospect or in prospect, I think it is impossible for any of us, however humble may have been our individual contributions to the former, or however modest may be our hopes with regard to the latter, to feel otherwise than a glow of pride and satisfaction at the past, and an eager ambition to render the future not unworthy of it. We live in an age which has witnessed a remarkable stirring of the human intellect, a previously unknown diffusion of elementary teaching, an extension of political power to the masses of the community, and a marvellous development of the principles and applications of science by the few. An event of national importance, the Jubilee year of our gracious Sovereign, affords us a resting place from which we can hardly avoid an endeavour to estimate the amount and value of our acquisitions; and among those acquisitions, among the enlarged principles and better applications of science, it seems to me that incomparably the first place must be given to those by which we have increased our knowledge of the phenomena of life, and our control over the aberrations which constitute disease. Other familiar achievements of science are, indeed, better calculated to impress the general public: but chiefly, perhaps, because they are regarded from the standpoint of popular ignorance. The veriest clown is able to appreciate the progress which has replaced stage-coaches by railways, and earlier modes of communication by the telegraph and the telephone. It is only a mind of exceptional cultivation

which can fully understand what has been gained, say in our knowledge of the methods of diffusion of disease, and in our power of controlling such diffusion, since a time so recent as that in which the classical lectures of the late Sir Thomas Watson were first given to the world. It is impossible for any physician to read what Sir Thomas Watson had to say upon these subjects, and to compare it with the certainties of to-day, and with the surmises based upon these certainties, without a feeling of absolute reverence for the workers who have bridged over so wide a chasm. It is hardly too much to say that this victory over the unknown, and others of a similar nature, have only been rendered possible by a totally new departure as regards the methods of medical investigation, a departure which may be held to have commenced with the increased exactness of diagnosis, in diseases of the heart and lungs, that was rendered possible by the practice of auscultation, and which has gradually been developed into the habitual use of instruments of precision by physicians and surgeons, until at last our knowledge is felt to be painfully incomplete in every case in which we are not able to indicate, with a considerable approach to exactness, the nature and extent of the morbid processes which have either occurred or may be impending. The change has not been unnoticed by the public; for their perception of it has impressed itself, in a marked manner, upon those forms of popular language which are the ordinary exponents of what may perhaps be dignified by the title of popular thought. When I was a youth, non-medical people, who were anxious to bestow the highest possible praise upon a medical practitioner, and to place his claim to confidence upon an unassailable basis, would say of him that he was a man of "great experience." They would now say that he was a man of great knowledge, or of great carefulness, or of great sagacity. Our parents were probably right in their generation; because, in the absence of the exact knowledge which is attainable by modern methods of examination, experience was undoubtedly a valuable safeguard against grievous error. A man who had once been misled by a certain appearance, and who retained a recollection of the consequences of his mistake, was not likely to fall into it again. In this sense, if in no other, the experience of the practitioner was a source of safety to the patient, a protection against improper or over-zealous treatment. The experienced physician or surgeon of that period might be likened to a man who had often traversed a narrow and

tortuous path, beset by precipices and pitfalls, and whose services as a guide, on a dark night, might be thankfully accepted by a stranger. The physician or surgeon of to-day may have traversed the path less frequently, but he is nevertheless a safer guide than his predecessor, because he carries a lantern which shows the way. If I may take an illustration from my own department of practice, I would remind you that vision may be lost from many different changes in the background of the eye, without manifest alteration in the superficial portions of the organ. Such cases were formerly described as "amaurosis," and experience had taught that in some of them the free use of mercury was beneficial, while in others it was useless or injurious. Cases of inflammatory effusion in the optic nerve or retina would belong to the former class, cases of haemorrhage from degeneration to the latter. When the question whether to administer mercury to a given patient had to be decided, the experience of the practitioner would be great value. If he had given it in any other instances apparently similar, he would have been impressed by even slight differences between the persons in whom it had succeeded and those in whom it had failed; and he would be likely to be guided to an avoidance of mischief by an almost instinctive perception of a difference or a resemblance which he might yet be hardly able to define. I very well remember a case in which two men of great experience objected to the administration of mercury to a patient suffering from amaurosis, on the ground that they "did not think it would do good;" while another of smaller or of different experience, insisted on administering it, and did so with very injurious results. To-day, such a question would be promptly decided upon a basis of ascertained fact; and the opinion of any medical student, who had learned to look through an ophthalmoscope, would be more valuable than that of Dalrymple or of Lawrence, if we could resuscitate either of them in order to obtain it. But perhaps the most serious objection to the guidance of experience arose from the liability to error entailed by its limitations. However large relatively, the experience of any individual was small absolutely, and was thus often at variance with the equal experience of another, or with what time has shown to be the truth. Half-a-dozen cases of inflammatory amaurosis in which mercury was successful, or half-a-dozen cases of haemorrhagic amaurosis in which it was injurious, would have sufficed, fifty years ago, to modify the

whole mental leaning of the practitioner under whose care they fell.

Such illustrations might be indefinitely multiplied alike from my own and from other departments of the art of healing; and I feel that the difference between then and now is such as abundantly to justify the claim I have advanced on behalf of medical science. Another reason which would weigh with me in assigning the first place in scientific progress to discoveries in physiology, in pathology, and in therapeutics, is the fact that the problems which these present are infinitely more difficult, because infinitely more complicated, than any others. In purely physical science it is easy, as a rule, to reduce any question to what may be called its simplest terms, and to eliminate any disturbing elements which may interfere with the attainment of the desired solution. In medicine, using the word in its widest sense, these disturbing elements are rather essential than accidental. They can only be eliminated by some fortunate chance, occurring to an observer who is able to estimate its value, by cunningly devised and scrupulously executed experiment, or by induction from an enormous number of individual instances. The infinite varieties of human temperament, and the infinite varieties of human environment, are alike in introducing modifications, often of a most perplexing character, into the operation of agencies which, if under precisely similar conditions, would act as uniformly as the physical forces by which the universe is governed. The complications thus arising are often eminently misleading; and they render it necessary that those who would unravel them should possess, as a prominent mental characteristic, the most absolute devotion to the cause of truth. Such devotion is not more necessary, perhaps, in medicine than in physical science; but it is unquestionably far more difficult of attainment. The path of the physician or surgeon often reminds me of that of the girl in the Arabian Nights, whose safety and success depended upon her ascending a stony hill without looking behind her, pouring a little water upon every stone as she went, and disregarding all the inducements to turn round which were offered by a chorus of mocking and deceptive voices behind her. The magnitude of an achievement is surely in proportion to its difficulty on the one hand and to its usefulness on the other; and so, when I contemplate each new step that is gained in medicine, and the results to the human

race which may spring from it, I cannot but think also of the mental attributes which such a step implies, of the patient labour, of the provisional acceptance and ultimate dismissal of many hypotheses, of the abandonment of even cherished errors, of the rejection of fallacies, of the steady pursuit of truth and truth alone. I cannot pursue such a contemplation without a feeling of pride in my calling, a pride resting at least as much upon the character of its methods as upon the usefulness of its results. We differ from the philosophers who may be called pure physicists in another particular, in that we are far more numerous; and this circumstance, while on the one hand it confers the advantage of giving us a larger body of persons who are actively engaged in collecting facts on which generalisations may be founded, has also the incidental disadvantage of supplying, even from our own ranks, some voices which would divert us from the pursuit of truth, some of the wandering lights which would beguile us into the path of error. The very strength and fulness of the stream of medical science suffice to bring bubbles and refuse to its surface; bubbles which sometimes float for a time glittering in the sunlight, soon to burst and disappear, refuse which is before long left stranded by the advancing current. Such things may attract, may even arrest, the attention of superficial observers; but they are only accidents, and, in spite of them, the stream itself pursues its beneficent and fertilising course. The history of the profession of medicine in these respects is also a history of our Society, which is a microcosm of the profession, and which has endured long enough to have been an active participator in the steps which have raised that profession from the level of a superstition to the dignity of a science. I may, therefore, claim for this Society, as I claim for the profession itself, that its work has been characterised by that soundness of method which alone can lead to soundness of result. The many illustrious men whose voices have been heard within our meeting rooms have been known to make all other considerations subordinate to the pursuit of truth, and they have been rewarded by the attainment of results the value of which time constantly confirms and enhances. Their modes of thought have been favourably influenced, no doubt, by the traditions of the Society itself, but have been primarily derived from those of a still earlier period, from the traditions of the great hospitals and schools of medicine, these acting upon the medical societies, and being in

turn acted upon by them. At St. George's, for example, the traditions which have come down from John Hunter and Thomas Young, through Baillie, and Brodie, and Cæsar Hawkins, have necessarily influenced, as the traditions of Abernethy and Astley Cooper have in like manner influenced elsewhere, hundreds of students who in their turn became worthy members of their calling, and of such Societies as this ; and the work of recent years, fruitful as it has been when compared with that of any previous period of equal duration, has nevertheless been based upon the precepts and examples of the great men of earlier generations, who had wisdom to perceive, and strength to follow, the path along which alone increase of knowledge can be found. To these, therefore, our scientific ancestors, be all honour ; for we are indebted to them for the discovery that the way to the advancement of medicine is by devotion to truth, by abnegation of self, and by earnest labour for the benefit of mankind. I dwell upon these latter aspects of medical science and study, illustrated as they have been in recent years by the progress of that great work of preventive medicine which might seem, at first sight, calculated to strike a fatal blow at the sources of medical prosperity, because I do not think they are even now sufficiently appreciated by the public, and I am not quite sure that they are sufficiently recognised even among ourselves. I claim for our profession the very highest place among the forms of mental activity now practised by mankind ; for I think that the pursuit of pure truth as an intellectual exercise, and the pursuit of knowledge for the good of others as a goal, not only tend to raise, but actually and very appreciably do raise, alike the intellectual and the moral character of all who are so occupied. It is surely for this reason that, in what is numerically a very large profession, it is so rare to find any individual who is unworthy of the trust reposed in him. The infinite varieties of capacity and of opportunity must render some men better practitioners than others ; but how rare it is to find a doctor, whether he be in a West End square or in a country village, who is other than the esteemed and trusted friend of those among whom his work is known and among whom his lot is cast. I think that a profession which can point to such a record as ours is almost bound to assert itself, and to claim for its example and its methods a decided influence upon the conduct of national education. What other is there which can be compared with it ? Lawyers are

chiefly occupied in supporting the contentions of their respective clients, an exercise which may probably be conducive to acuteness of perception, but which has no appreciable tendency towards the discovery of truth or the administration of justice. Theologians, of various creeds, are chiefly occupied in disputing about the interpretation of words ; an occupation which, in the language of Dugald Stewart, produces a lively curiosity to know what is said, without any corresponding curiosity to know what is true. Politicians of all parties are chiefly occupied in tickling the ears of the uneducated by formulæ which are either deceptive or unmeaning, or in urging their followers to place confidence in some public man in whom they have long ceased to have confidence themselves. Along such lines as these we may look for much ingenuity and readiness, for much active and lively self-interest (often displayed less for the individual than for the cause or sect which he has espoused), but hardly for loftiness of intellect or for purity of morals. In these respects, such pursuits scarcely stand upon a higher level than the various forms of trade ; and they all alike fall short of affording any standards of belief or of conduct which can be safely regarded as conducive to national greatness and prosperity. For our own pursuits I claim that that they do furnish such standards ; and so conspicuously that it behoves us to recognise alike the fact and the explanation of it. I am strongly of opinion that the time cannot be far distant when the medical profession will be generally cited as having shown the right path in the way of mental training, and when the members of other callings will begin to strive to profit by our example. Of this at least I am certain, that the example, however excellent and encouraging it has been in the past, will be fully sustained by those whom I see around me, and over whose deliberations for the session I shall have the distinguished honour to preside. I trust that those deliberations, when we come to look back upon them as belonging to the past, will be found to contain facts and inductions which will increase the sum of human knowledge, and will form part of the history of medicine.

## HERNIA OF THE CÆCUM.

By FREDERICK TREVES, F.R.C.S.

HERNIA of the cæcum, although not actually common, is certainly not rare. It has been met with in the umbilical, inguinal, and femoral regions; is most frequent in the first-named situation and most uncommon in the last. In the umbilical district it is associated, so far as I know, only with that variety of rupture known as the congenital umbilical. This rare hernia is met with at the time of birth. The coverings of the sac are formed from the tissues of the cord, and into that structure the protrusion originally extends. The condition depends upon a defect in the closure of the visceral plates, a defect that seems to be often consequent upon some imperfect development of the bowel. There is a time in the history of the formation of the gut when the cæcum lies without the future abdominal cavity. It then enters that cavity and, performing nearly a circuit in the abdomen, finally reaches the right iliac region. In the congenital umbilical hernia, the cæcum is often found arrested at the umbilical aperture. It occupies the rupture. The rupture is provided with a perfect peritoneal sac, and the cæcum lies free within it as would any segment of the small intestine. I have met with and operated upon three examples of this hernia ('Lancet,' 1881, record of one of these cases). In two the sac contained the *caput coli*, and in the third it was also occupied by a large Meckel's diverticulum. With this form of cæcal protrusion I do not propose to deal further, but to limit my remarks to the herniæ that occur in the inguinal and femoral regions.

I shall describe two examples of this rupture in the situations named, and shall deal mainly with the question of the sac. There is a remarkable statement that seems to have attached itself to this condition. It is to the effect that the cæcal hernia has no sac. This statement occurs, with one or two exceptions, in all the modern text-books in English and French that I have specially consulted. It appears to have been handed down from one manual to another as a species of entailed property. I shall endeavour to show that cæcal ruptures are, except in a few instances, always

provided with a sac, and that the gut lies clear within the interior of that sac. I believe also that there is little or no evidence to show that the cæcum may descend into the scrotum or crural region entirely bared of peritoneum, and unaccompanied by any diverticulum from that membrane. Further, I doubt if the *hernie akystique* of the French has any existence, so far, at least, as cæcal ruptures are concerned.

Among the early reported cases of cæcal hernia is one recorded in 1732 by Arnaud ('Dissertation on Hernias,' pt. 2, obs. xvii) that may here be noticed. It concerned a man of 60, who had had a scrotal hernia for twenty years. The tumour had a circumference of 27 inches, and reached to the middle of the thigh. For some years he had had occasional attacks of colic. At last the rupture became incarcerated, and on the fifth day herniotomy was performed. The sac contained the ileum with the cæcum and colon—some 10 inches in all. "The intestines were adherent to the hernial sac and to each other, and were even gangrenous at several points . . . . I employed one hour and a quarter in dividing the adhesions and bridles which connected the colon to the hernial sac. At last, being at a loss what method to follow in order to finish the operation, I resolved to cut away the whole mass of the protruded intestines close to the internal ring . . . . The ileum, the cæcum, and the beginning of the colon were twisted together, the colon having passed over the ileum towards the inner side and ileum towards the outer side, and both of these intestines had contracted strong adhesions with the edges of the inguinal ring." The patient made a good recovery, a permanent fæcal fistula, however, resulting. Scarpa, in commenting upon this case, maintains that the adhesions were natural, and that there was an imperfect sac. The description, however, more closely accords with the view that the adhesions were the result of the local peritonitis that is frequently associated with this form of hernia.

With regard to the question of sac or no sac, I may in the first place point out that the anatomy of the parts concerned would fully support the view that the cæcum, when herniated, may be provided with a complete sac, and lie free within it, as would any loop of the smaller bowel.

In my Hunterian Lectures on the Anatomy of the Intestinal Canal and Peritoneum, delivered at the Royal College of Surgeons

in 1885, I pointed out the following facts bearing on this matter. In opposition to current views, I stated that I had never found the posterior surface of the cæcum uncovered by peritoneum; I had never found it attached by areolar tissue to the iliac fascia; and I had not met with a single example of a meso-cæcum. These statements were founded upon the examination of 100 fresh bodies. Other points were these: in the great majority of instances the apex of the cæcum corresponds with a point a little to the inner side of the middle of Poupart's ligament; in a number of cases the cæcum hangs over the pelvic brim; in 18 per cent. it is lodged entirely within the pelvic cavity. In every instance, out of 100 examinations, the cæcum was free and entirely invested by peritoneum. The line of reflection of the peritoneum from the posterior wall of the cæcum on to the posterior abdominal parietes varies. It is usually placed between a line on a level with the summit of the iliac crest, and another on a level with the anterior superior spine. Those who are impressed with the orthodox description of the cæcum will scarcely believe that the average measurement in a vertical line along the back of the colon from the tip of the cæcum to this reflection of peritoneum is 4 inches. In one quite exceptional case it was eight. The mobility of the cæcum is great, and depends upon two conditions, upon the length of intestine that extends between the tip of the cæcum and the reflection of the peritoneum, or upon the presence of an ascending meso-colon. In eleven instances the cæcum could be made to touch the liver, or any part of the left side of the pelvis. In some of these specimens it may well have occupied a hernia on the left side. In one case the tip of the cæcum could be made to touch the xiphoid cartilage, and in several instances this mobile piece of intestine could be drawn down the thigh to the level of the great trochanter.

With these anatomical conditions it is easy to conceive a hernia of the cæcum unattended by any peculiarities as regards the sac. The statement that the cæcal hernia has no sac, or an incomplete one, can be traced back at least as far as Scarpa's celebrated treatise on hernia. This work was published in 1809, and here I think the statement—in its present form—takes its origin. Authors previous to this time had spoken of sacless cæcal herniæ. Thus, Chopart and Desault ('Traité des Maladies Chir.,' t. ii, p. 195), writing in 1796, state that they had seen the cæcum lying

bared of peritoneum under the integuments of the scrotum. Sernin ('Journ. Gén. de Méd. par Sedillot,' t. xvi, p. 302) had met with a like condition, and had indeed introduced the term "*entérocéle akystique*." Scarpa took up the following position. He owned that the free and movable portion of the cæcum may form the contents of a hernia in the groin, may lie in a clear sac, and be susceptible of ready reduction. He gives a case of this form, and an excellent illustration of the parts when exposed (Plate VII, Fig. 1). With regard to other forms he writes thus: "In dissecting several of these herniæ, I have found that the cæcum with the appendix, and the beginning of the colon in descending through the internal ring into the scrotum, not only relax the natural bridles which connect these intestines to the os ilii and to the psoas muscle, but likewise that these intestines in descending draw after them into the scrotum, that part of the great sac of the peritoneum to which they are naturally united opposite to the right side. Consequently, the hernial sac within which these intestines are contained, is formed of the same identical portion of the great sac of the peritoneum, which in the sound state lined the ilio-lumbar region. . . . . Whence it happens that on opening the hernia the intestines are found adhering to the hernial sac in the same manner as they were united to the great sac of the peritoneum within the abdomen in the right ilio-lumbar region." He supports this statement with cases, and some admirable illustrations. I cannot say, however, that these figures serve to prove the point. They show that the herniated cæcum may have only a partial sac, and be covered by peritoneum only on its anterior aspect. No anatomist could say that they show an arrangement of the peritoneum that would be normal were the gut lying in the iliac fossa instead of the scrotum (Plate VII, Fig. 2). In the chief case it is stated that "the appendix was, in several places, in continuity with the hernial sac." The figure shows this; but it cannot be said that an adhesion of the appendix to the peritoneum of the iliac fossa in several places is a normal condition.

Pelletan ('Clinique Chirurgicale,' Paris, 1810); Hesselbach ('De Ortu et Progressu Herniarum,' Würzburg, 1816); Cloquet ('Recherches sur les causes et l'anat des Hernies,' Paris, 1819), and others, all adopted Scarpa's view of the state of the sac in cæcal hernia, namely, that it was partial only in the majority of

cases. Lawrence, in his famous 'Treatise on Ruptures' (5th edition, London, 1838), accepted Scarpa's explanation entirely. He went further, however, and described a cæcal hernia without any sac at all. A few years later, the 'System of Surgery,' by Chelius (London, 1847), appeared in English. In that work it is simply said with reference to cæcal hernia, that "there is not any sac." From Chelius to the present text-books of surgery is only a step.\*

Lawrence's case of cæcal hernia without a sac requires notice. It is reported in the following words: "A man, aged 45, had laboured under scrotal hernia for several years, without wearing a truss. He was attended by a surgeon in this city, in consequence of symptoms of strangulation, which had existed for three days. The usual means to afford relief were employed without success; hence an operation was deemed necessary. A careful dissection was made through the various coverings to the gut, but no sac or peritoneal coat could be found. In searching for a sac, an opening was made into the cæcum, from which faecal matter escaped; until this occurred, the operator could not know that he had opened the intestine, as the coats were thickened and greatly changed in appearance. That the passage of the contents of the bowels might be quite free, the lower margin of the internal oblique and transversalis was divided. In the space of thirty-six hours faecal discharges took place through the wound, but the patient died three days after the operation. On examination after death, the hernia was found to consist of the inferior and posterior parts of the cæcum, which could not originally have been covered by peritoneum to the usual extent. The portion of intestine had passed behind the peritoneum, between the spermatic cord and the cremaster muscle. The appendix and the junction of the ileum with the cæcum were close to the internal ring, and it was in this situation that the peritoneum was reflected from the walls of the abdomen to the cæcum."

To prove his point, Lawrence makes an anatomical assumption which some may not be disposed to allow. It is difficult to understand how the tip of the cæcum, that is usually wholly covered by peritoneum, could have bared itself of that membrane, and yet

\* It is but fair to say that South, the translator of Chelius, adds a footnote in which he protests against his author's statement, and declares that "the cæcum does descend into a true hernial sac beyond doubt."

have shown such a reflection as is described. The case better accords with some such theory as this. The free end of the cæcum is protruded into a hernial sac. It inflames. Its walls are thickened and become adherent to the sac; the latter is obliterated. Apart from all explanation, the case is not so clear that it can be said to prove the existence of a sacless hernia. It is, however, the best reported case of this supposed condition with which I am acquainted.

One specimen, however, must be mentioned in connection with this matter. It is in the Museum of St. Bartholomew's Hospital (No. 2115), and is thus described: "Inguinal hernia, combined with hydrocele of tunica vaginalis. The hernia is situated behind the enlarged tunica vaginalis, which is flattened by the pressure of the hernia. The hernia is opened posteriorly, and its contents, which are the cæcum and part of the colon, are there shown. The vessels of the spermatic cord are separated; the spermatic artery and the vas deferens pass together along the inner and posterior part of the hernia, and the spermatic veins are at some distance external to them. There is no true hernial sac."

Through the kindness of Mr. D'Arcy Power I have been enabled to examine this specimen carefully. In the first place, it presents a sac of clear outline, capable of holding a hen's egg. The continuity of this sac with the general peritoneum can be readily traced. In the second place, the gut contained in the hernia is not cæcum. It is a loop of colon quite free from adhesions. Its anterior part only is covered with the sac, so that a large portion of the circumference of the loop—less than one-half—is uncovered by peritoneum, and is outside the sac. The specimen affords an excellent example of incomplete sac, but it is not an example of a cæcal hernia without a sac.

Another specimen in the same Museum (No. 2086) shows a cæcal hernia with a large sac, that is nearly but not quite complete.

It may now be convenient to describe the two examples of hernia of the cæcum upon which this paper is based. The first case is that of a man, aged 41, who was admitted into the London Hospital on May 31st, 1886, with a very large and remarkable looking scrotal hernia. The patient was a potman, and had always been engaged in public houses. He was of average height, was spare, of slight muscular development, and unhealthy looking. He was

flabby, and a little anæmic. He had been in the habit of drinking a great deal. Apart from the rupture, the patient appeared to have had no definite illnesses, other than such as may depend upon excessive drinking. His account of the hernia was as follows:—Fourteen years ago, when turning a drunken man out of a public-house, he was thrown violently to the ground, and was knelt or jumped upon. From this resulted a small strangulated hernia in the right inguinal region. The patient was not aware he had a rupture prior to the assault in question. With its first appearance it became strangulated. It was of small size, and did not extend to the scrotum. He was taken to St. Thomas's Hospital, where the gut was reduced by operation. The wound appears to have been attacked by erysipelas, and sloughing and copious suppuration followed. He remained in the hospital for nearly twelve months. When he left, there was a large and irregular scar in his groin, but the rupture had entirely disappeared. The suppuration does not appear to have involved the scrotum. He wore no truss, and saw nothing of the hernia for six years. At the end of that time, it appeared again very insidiously, and increased slowly but steadily. In less than a year it had descended into the scrotum.

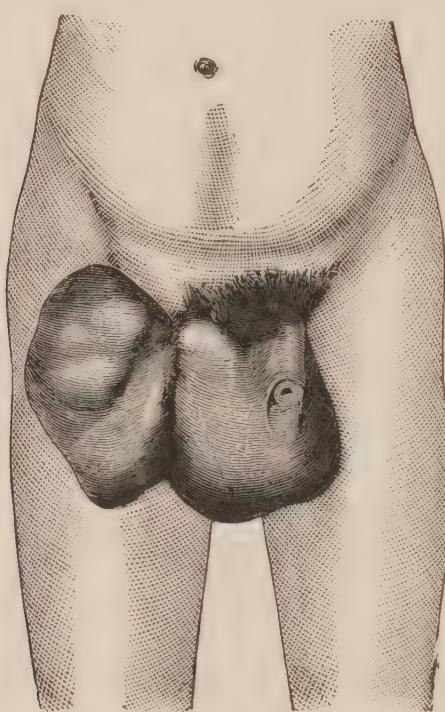
About two years ago the tumour "began to be double;" the outer or second swelling appeared, and increased very rapidly. The scrotum became larger, and in a little while the whole mass had attained to twice its previous size.

For some years the scrotal tumour had been readily reduced. When, however, the second swelling appeared reduction became difficult, and, for the last year or so, the patient had made no attempt to replace the intestine. With regard to the outer tumour when it first appeared, and was of small size, its contents were readily returned; as its dimensions increased it became quite irreducible. The patient had never worn a truss; when the tumour was small he wore a suspensory bandage, but of late years the mass had become too large for any kind of supporting apparatus. The rupture gave him a great deal of trouble, and the inconvenience of it was still increasing. It was the seat of a wearisome dragging pain, that became unbearable after much exertion or long standing. It was the cause, he thought, of some pain he felt in the back. He was liable to frequent attacks of slight colic and to indigestion. He was troubled with flatulency, and the bowels were irregular; sometimes he was constipated, at other times he had

diarrhœa ; he was often a little sick ; it is very probable that some or all of these latter symptoms were due in part to his habit of excessive drinking.

The large size of the swelling exposed it to frequent injury, and he had difficulty in concealing it from view even when he wore an apron. Of the two tumours, the outer one had been the most troublesome ; it had been now and then the seat of definite pain, attended with considerable tenderness. The patient sought relief because the hernia was beginning to incapacitate him from work.

In the right inguinal region was a tumour of considerable dimensions, divided into two distinct parts. (See Figure.) The inner



of the two swellings presented the ordinary characters of a scrotal hernia of a large size. At the posterior and inferior part of the mass the testicle could be indistinctly felt ; the tumour was resonant on percussion, and appeared to contain intestine only ; the greater part could be reduced, but the reduction was effected slowly, and with difficulty. The scrotal tissues, apart from the effects of distension, were perfectly healthy ; the left side of the scrotum and the left testicle were normal. The outer tumour was irregularly oval, its long axis being vertical ; it covered nearly the whole of the front of the thigh near the groin, and extended down the limb for 7 inches ; the surface was lobulated, and covered

by thin integument that near the inguinal ring was composed mainly of scar-tissue. The tumour was connected to the body by a narrow pedicle, with a diameter of less than 2 inches; this pedicle joined the neck of the scrotal hernia, and the two fused together at an enormous external inguinal ring. Beyond this point the swellings were perfectly distinct. It is evident, however, that they communicated, for when attempts were made to reduce the scrotal rupture, the other tumour increased in size. The outer swelling was resonant on percussion in front and at its outer side, dull on its inner side. Its contents were irreducible, although the size of the tumour could be greatly diminished by squeezing the contained bowel; masses of omentum could be felt in the inner portion of the swelling. The abdomen was quite flat, and not disposed to be pendulous.

The operation for radical cure was performed on June 4th; it was carried out "antiseptically," the spray being used. I made an incision, 4 inches long, in about the usual position for inguinal herniotomy. It was so arranged as to cross the united neck of the two tumours. The interior of these was soon exposed; they were both entirely lined by peritoneum, and possessed a common neck placed at the opening in the abdominal parietes. The scrotal tumour simply contained a mass of perfectly free coils belonging to the ileum. These were reduced without difficulty.

The outer tumour was less easily dealt with. At its inner side there was a very large mass of omentum, a considerable portion of which was adherent. At its outer side was the cæcum, the appendix, the commencement of the ascending colon, and the last few inches of the ileum. The appendix and ileum were free, but the cæcum was attached to the sac in several places by a number of firm peritoneal adhesions.

All that part of the cæcum and colon that occupied the hernia was entirely covered by peritoneum. There was no meso-cæcum. The bowel, but for the adhesions, would have been hanging free into the hernial sac. These adhesions were divided, the omentum was freed, was clamped as high up as possible, and the part below the clamp cut away. Of the divided omental vessels, the six largest were secured by catgut ligatures; the remainder were nipped by Wells's forceps, which were twisted off, without loosening the blades, before the operation was completed.

When all intestine had been reduced, the neck of the sac was

carefully separated from its connections at the opening in the parietes, and firmly closed with stout whipcord. There was no inguinal canal, simply a large hole in the situation of the canal capable of receiving all the fingers. The margins of this aperture were brought together by two sutures of Chinese twist. The structures of the cord were widely separated over the surface of the sac. The testicle was wasted and hard, and the epididymis could not be distinguished from the gland. The testicle, the cord, and the whole of the sac below the ligature were now removed. The testis appears to have been inflamed after the first operation. On section, it was found to be represented only by a homogeneous fibrous mass. The greater part of the skin covering the double tumour was cut away; the piece removed measured about six square inches. After the sutures and drainage-tube had been inserted, the incision was represented by a simple line. The operation occupied one hour.

I did not approximate the margins of the hernial ring under the impression that union of those margins would follow. I considered that the two sutures would serve to prevent protrusion of bowel during the healing of the skin-wound. If healing by first intention were to follow, the encysted sutures would long serve to keep the edges of the ring together. If suppuration followed, the amount of inflammatory material poured out while these two foreign bodies were being eliminated would, when organised, form a fair barrier against further protrusions. The stump of the omentum was introduced well into the abdomen, and left free in that cavity. The coils of ileum in the scrotal hernia, and the small segment of that gut in the outer tumour, were not continuous. So far as I could ascertain, a considerable length of unprotruded ileum must have existed between the two herniated segments.

When the cæcum was free, it was carefully examined. The appendix had not become adherent, either to the sac or the gut. When the extreme upper limit of the protruded colon was examined, the line of reflection of the peritoneum from that bowel to the posterior parietes was reached. This reflection was just at the hernial ring, and, from it, it would appear that there was no mesocolon to the ascending colon.

In attempting to reduce the scrotal hernia, a little of the gut could be pushed by the omentum into the outer rupture-sac.

It would be safe to assume that the original scrotal hernia contained small intestine only, and that the formation of the second tumour was encouraged by the weakening of the parietes, due to the suppuration and sloughing. The second sac was formed from the first, the two having a common neck.

The wound was dressed with sponge and iodoform, and subsequently with iodoform gauze. The patient made a good but slow recovery. The skin-wound healed, but suppuration took place in the deeper parts. A month after the operation, the patient was up and about, and a small sinus alone existed. He was seen again two months after the operation. There was considerable thickening about the inguinal opening. A minute discharging sinus, which gave no trouble, still existed. On examining this, the whipcord-loop applied to the neck of the sac was found lying quite loose; on its removal the sinus closed. There was not the least trace of any return of the rupture four months and a half after the operation. No truss had been worn.

The second case was that of a woman, aged 56, who was admitted into the hospital on June 18th, 1886, with a severe contusion of the hip. She incidentally drew attention to a large rupture in the right groin. She looked much older than she was; was very thin and flabby, and in feeble health. She had had several children.

She first noticed the rupture about two years ago. She discovered it by accident. It appeared so gradually that she was unable to give any account of its early condition. She followed no occupation apart from her own household duties. The rupture never gave her any trouble. She never had made any attempt to reduce it, and could not say whether it was reducible or not. She had never worn a truss. The swelling had increased gradually in size.

The hernia was femoral and of considerable size. The long axis of the tumour was parallel with Poupart's ligament, and measured  $4\frac{1}{2}$  inches, reaching to the anterior superior iliac spine. The vertical width of the tumour was  $2\frac{1}{4}$  inches. It was irregularly lobulated on the surface. The coverings were very thin, and the integument was white and atrophied. The tumour was always tympanitic on percussion. The thin parietes and the general wasted condition of the patient enabled one to make out with great distinctness the vermiform appendix. It lay in the lower

part of the swelling, and could be rolled between the finger and thumb. It could be followed into a large rounded and lobulated mass of gut that was evidently the cæcum. The sacculi of the bowel were reproduced through the thin wall of the hernia. The swelling was tympanitic. The whole of the contents of the rupture were reducible. After pressing upon the rupture for a few seconds, the gut within slipped suddenly back *en masse*. The patient had never seen it reduced before, and it was apparently little affected by the recumbent posture. When the hernia reformed, the same physical characters were reproduced in the tumour, and the appendix reappeared in the same place. The femoral ring would have readily taken three fingers. The abdomen was flat and, indeed, sunken.

The patient stated that she was very liable to indigestion, and to attacks of "spasms." She was occasionally sick during such attacks. Her bowels were irregular; they were sometimes confined, and sometimes were opened freely. Latterly she had had diarrhœa. These symptoms were probably independent of the hernia. They had existed before the rupture was noticed. The patient lived very poorly, and for several years had been practically edentulous. In this case, the thin coverings of the hernia made it clear that it contained the cæcum and appendix. There was evidently a perfect sac, the reduction, when effected, was complete, and the protruded bowel must have been provided with a perfect peritoneal covering. In Guy's Hospital Museum (No. 2503-52) is a specimen closely allied to the present case. It shows a right femoral hernia in a woman aged 47, that contains the whole of the cæcum. It lies free within a distinct sac. The rupture had been irreducible for years, but had given little trouble.

Speaking of cæcal hernia generally, museum specimens and recorded cases show that the rupture is much more common in inguinal than in femoral herniæ, is more common in males than in females, occurs on the right side, and is practically limited to adults. With regard to the last-named points, Schmidt (Pitha and Billroth's 'Handbuch,' Stuttgart, 1878, p. 38) mentions a case of cæcal hernia in the left inguinal region. The gut had a mesentery, and hung quite free in a well-formed sac. It was readily reduced. Sandifort ('Icones Herniæ Congenitæ,' 1781, records the case of a male infant, aged three months, with a congenital scrotal hernia of the right side. The sac contained the

cæcum, appendix and end of the ileum. The appendix was adherent to the testicle and to the bottom of the sac. Sandifort suggests that this adhesion was congenital, and that as the testis descended the cæcum was dragged after it. Mr. Lockwood has reported a case of congenital scrotal cæcocele and refers to like examples by Wrisberg and Cloquet ('Med. Chir. Trans.', vol. xix, p. 506).

The large museums of London, namely, those of the College of Surgeons, and of St. Bartholomew's, Guy's, and St. Thomas's Hospitals, contain seven specimens of cæcal hernia. Eight cases, including the two now reported, occur among recent records. In two out of these fifteen cases (St. Bartholomew's Museum, No. 2086, and Schmidt, p. 38) the sac is incomplete. In one there is a sac, but its limits are obscured by morbid adhesions, and the results of dissection (Guy's Museum, 24871-0), and in the remaining twelve cases\* there is a perfectly clear sac, such as exists in ordinary ruptures.

In the cases with perfect sacs, that part of the cæcum and colon is protruded that would naturally have been free and covered by peritoneum while in the abdominal cavity. In the very excellent specimen in St. Thomas's Hospital Museum some 4 inches or more of a normally arranged cæcum and colon lie free within the sac.

It is to be noted that in these cases the peritoneum that lines the iliac fossa is actually drawn down, as Scarpa believed. This is shown by the fact that the line of reflection of the peritoneum from the colon to the parietes, instead of being about the level of the iliac crest, will be just within the inguinal ring. This was very evident in my case, and is clearly demonstrated in the museum specimen just named. In a case of Petit's ('Traité des Malad. Chir.', t. ii, p. 352, published about 1790) the same arrangement was evidently present. Should such a protrusion increase, the enlarging sac may obtain a fresh supply of peritoneum from this very reflection; and so in time some of the upper part of the herniated gut may be bared posteriorly, and an incomplete sac be established.

\* Guy's Museum, No. 2503-52; St. Thomas's Museum; College of Surgeons Museum, Nos. 2634, 2635, 2638; 'Medical Times,' June, 1859, p. 578; 'Gazette des Hôpitaux,' March, 1871, p. 149; Pathological Society's 'Transactions,' vol. i, p. 101; *ibid.*, vol. i, p. 103; Schmidt, *loc. cit.*, p. 37.

An incomplete sac, when it exists, may be formed also in this manner. The cæcum protrudes as a free segment of gut. It alone occupies the sac. Some loops of small intestine now descend, the sac increases, and in its growth drags the peritoneum from the hinder wall of the cæcum. Schmidt records a good example of this, which is illustrated by a clear figure. The cæcum is covered only on its anterior aspect. From the apex of the cæcum, which is high up in the sac, there extends to the bottom of the sac a falciform fold of peritoneum, which certainly appears to have been stripped from the cæcum. In such a case the connective tissue aspect of the *caput coli* is not necessarily turned backwards. The gut may be so distorted in its position that all the cæcum visible from the front may be bared of peritoneum.

The cæcum may be protruded alone, or with it may be coils of ileum and omentum. In such cases the cæcum will usually lie to the right, the ileum to the left, and the omentum between the two.

Of the clinical characters of the cæcal hernia there is little to be said. It is usually irreducible or difficult of reduction. This may depend upon mere bulk or engorgement, or upon adhesions, or upon an incomplete sac, or upon the fact that the line of reflection of the peritoneum is close about the hernial neck.

It is apt to become inflamed, and, as a result, to become adherent. Typhlitis and perityphlitis—so called—may occur when the cæcum and appendix are in the scrotum, as well as when they are in the iliac fossa.

The hernia is frequently in the condition known as that of incarceration or obstruction, and, when so affected, it appears to present no distinctive symptoms. It then compares with a loop of transverse colon obstructed within the sac of an umbilical hernia. The rupture may be strangulated, but this condition does not appear to be so common as that just named.

Mr. C. B. LOCKWOOD more than a year ago went over all the specimens of cæcocele in the Museums of London and Paris. He concluded that it was exceedingly improbable that this hernia should be devoid of sac. The adhesions between the sac and the testis were the remains of easily defined foetal structures. He agreed with Mr. Treves that it was absolutely impossible to give an opinion concerning any museum specimen unless taken from the bottle and a careful dissection made of it.

Mr. SYDNEY JONES could quite indorse Mr. Treves' view that in these cases we had a hernial one. As a clinical point there was a considerable amount of difficulty in reducing such hernia even after division of the

neck of the sac. The difficulty was probably in part due to the large size of the protrusion.

Mr. TREVES, in reply, was glad to find that no Fellow had been able to relate a case of caecal hernia without sac. In regard to clinical signs, they were nearly always irreducible, exceedingly irregular, sometimes dull, sometimes tympanitic (this is not so with sacs containing omentum or small intestine). The intestinal symptoms were fitful constipation, colicky pains a long time after food. The patients associate these symptoms with the rupture. Their troubles are similar to those with a large umbilical hernia containing transverse colon. The irreducibility was usually due to the gut being covered by adhesions which might lead the operator to think he had opened up a region of connective tissue.

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*October 25th, 1886.*

## PARALYSIS AGITANS, DEVELOPING AFTER AN INJURY.

By SAMUEL WEST, M.D.

EDWARD RAYMENT, aged 45, was admitted into the hospital in April, 1876, with a cut head and peculiar movements of the right arm.

While standing at the tail of his hansom to unbuckle the nosebag, he was struck in the back, he thinks, by the pole of a passing wagon. He is not sure whether he fell, but he remembers being put into his own cab, and when he came to himself he found his head cut, and his right arm moving in an uncontrollable manner. He was brought at once to the hospital, and as the accident happened in Smithfield, he was seen within a few minutes of its occurrence. There was then a small cut on the head, going down to the fascia, which bled a little, but no injury to the bone was found. He was perfectly conscious and collected. The pupils were equal and reacted normally. Pulse 84, and regular.

He is, he says, naturally a nervous man, and would shake a little if excited, but never had any movements of this kind. He is temperate, and has never had any fits.

The usual position of the arm seems to be hanging down, but if it is placed across the chest it remains there. The pectorals, lat. dorsi, deltoid, scapular muscles, and all the muscles of the arm and

forearm are hard, and in a state of spasmodic contraction, those of the upper arm being more affected than the lower. The superficial veins are distended, and the temperature in the right axilla is about a degree higher than that in the left. The right arm seems a little smaller than the left, but this may be apparent and not real. In addition to the general tremor throughout the hand and arm, the flexors of the fingers are more affected than the extensors, so that the hand takes a position as if about to shake hands, the fingers giving a tighter grasp, about 120 times in the minute. In addition to this movement the hand, when placed across the chest, moves up and down, as if rubbing the epigastrium. The thumb moves more than the fingers, the extensor internodii pollicis being the most affected. All the movements are increased by any attempt at voluntary movement, but they can be controlled to some extent if the patient place the hand under the hips and lie upon it. The patient complains greatly of pain in the bend of the elbow and wrist, and a little in the axilla. Sensation is very irregular throughout. It is almost entirely lost over the whole hand, except on the ball of the thumb ; here, as well as over the rest of the arm, and over the deltoid and pectoral region, it is much impaired, and in the forearm more impaired on the outer than on the inner side. There is a little twitching of the leg when under observation, chiefly in the rectus, vastus internus, sartorius, and tibialis ant. This twitching is so slight as to be missed if not carefully looked for.

Ten days after admission an abscess formed over the sacrum, and discharged freely for some days, but then healed. The optic discs were frequently examined and found normal. The tremors gradually increased in the leg, and in a month's time were well marked.

A month later galvanism was tried for a fortnight, but without any improvement.

After two and a half months he left the hospital ; there had been a steady progress in the symptoms, and on leaving the left side of the face was a little drawn.

August 4th. A month after his discharge he was again seen. The tremors were the same, but he complained that the right leg below the knee felt dead, and that he could not feel the ground with that foot at all. On walking the left foot is thrown outwards and forwards, and brought down on the heel somewhat like a

patient with locomotor ataxy. The toes are dragged along the ground as if the flexors were weak. He feels as if he would fall towards the left side. This sensation came on first suddenly yesterday, and he would have fallen if he had not hold of his wife's arm. He had two such attacks yesterday and to-day. For three or four weeks he has had a feeling as if something were being pressed into the middle of his head about the lambdoid suture, and in both sides in front at the external angle of the orbit, which makes him feel as if he would lose his sight. The face seems still to droop somewhat on the left side, and the saliva runs out of the mouth on that side a little.

Three months later he came again into the hospital, having been getting steadily worse, and the left arm and leg had begun to move in the same way.

Shortly after he obtained £400 damages from the owner of the van. He had been entirely unable since the accident to do his work, that of a cabdriver, and with the money obtained as damages he set up a small shop, but he was unable to manage it, and gave it up after a few months.

After about two years he passed into the condition in which he now is.

In 1882 he became extremely ill, and was confined to bed for some weeks. He lost flesh so rapidly that I thought he would die, but he slowly rallied, and he is at the present time in much the same condition as before that attack.

At the present time, October, 1886, his condition is as follows:—He has aged much, but he looks better than he did some years ago. He is thin and worn, and slightly gray. He stands with the body somewhat bent forward; both hands are continually patting the inside of the thighs, the arms being partly flexed, and the hands extended, the feet are beating the Devil's tattoo, and the whole body is in constant shaking. If the hands close on anything, he often finds it difficult to let go; the grasp is feeble. But this is of recent date. The legs, he says, become sometimes so stiff that he cannot move them at all. He is almost constantly walking about, on account of the discomfort which he feels on sitting still. After standing a short time he inclines to fall backwards, and has occasionally lost his balance, so that he generally leans with his back against something. He frequently asks to be allowed to walk about, as he can neither stand nor sit for long together. Closing

the eyes makes no difference to him in any way. He sweats profusely in all weathers, but most in hot weather. His sleep varies, but he never sleeps for more than three hours in the night, on account of pains all over. These pains are aching and cramplike, and have troubled him for about two years. He often walks about nearly all night, and it seems wonderful, considering how little rest he gets, that his health is so well preserved. The head shakes from the transmitted tremors of the body, but the muscles of the neck are not themselves affected. There is no nystagmus, or trembling of the tongue. The speech is jerky, but not more than the tremors of the body would account for. The pupils are equal, and react to light and accommodation. The eyesight is good, and is not failing.

The sensation is everywhere good. There is a little headache at times, but never severe. Stopping the movements in one part, *e.g.*, in the hands, makes the movements elsewhere worse. All the functions of the body are normally performed. Sexual power has been impaired for some years. There is no member of his family who is similarly affected.

Treatment of the most varied kind has been tried, but without any result.

The case is now of just ten years' standing. As it presents itself now it is one of advanced *paralysis agitans*, but in its sudden access after an injury it is peculiar. Its access and its hemiplegic character at first seem to point to some cerebral lesion, but so far as I know the pathology of this disease is up to the present negative.

## CASE OF PARTIALLY CONSOLIDATED THORACIC ANEURISM.

By Dr. C. THEODORE WILLIAMS.

JAMES C., aged 42, waiter, was admitted into the Brompton Hospital, July 9th, 1885. There was no history of heart disease or aneurism in the family; 25 years ago he had rheumatic fever when in India as a railway guard, and was confined to bed for two months. He returned to England and enjoyed good health till two years ago, when he had an attack of gout, and a second

about eight months ago. Pain commenced in the right side of the chest twelve months ago, and six months later some cough and expectoration came on, which ceased in a month's time. During the last three months he has noticed shortness of breath, and since two months has had slight dysphagia, chiefly with respect to solids. Has had no haemoptysis, vomiting or choking fits, and has remained at work up to the present time, having exerted himself more than usual during the last two months.

When admitted he appeared a broad chested man, weighing 11 stone  $1\frac{1}{2}$  lbs., with capillaries of the face rather prominent. He complained of no pain in the chest, or cough, but of slight dyspnoea on going upstairs. Pulse 72, right and left equal, also both pupils equal; tongue clean; bowels confined; urine contained no albumen.

*Physical Signs.*—Chest is well formed, and veins on the left side all more marked than on the right side. Pulsation is felt in the first, second, and third interspaces in the left side, at spots varying from one to two inches from the sternum. Dulness can be detected over the whole sternum, and  $1\frac{1}{2}$  inches to the right of it and  $2\frac{3}{4}$  inches to the left of it. The line on either side of the sternum being nearly vertical as far as the third rib, and then passing into the area of cardiac dulness. The dulness is most marked to the left of the sternum.

The heart's impulse is felt under the sixth rib, somewhat tilted towards the axilla. The heart sounds were very loud over the whole chest, and the second sound was markedly accentuated over the first portion of the sternum. The pulsation to the left of the sternum was quite perceptible to the naked eye. Patient was put to bed and ordered iodide of potassium in 10 gr. doses three times a day. Under this treatment the dysphagia ceased, and after five weeks' confinement to bed, he was allowed to get up for a few hours every day in the ward.

September 14th. He has been in the hospital about two months, and has continued much the same, except that on one occasion he complained of shooting pain down the left arm. The left pupil is now smaller than the right; pulses both equal; no dysphagia.

September 22nd. To-day the right pupil is smaller than the left, and does not respond so well to light.

Examination with the laryngoscope shows no fixation of either vocal cord. He complains of some dull pain in the lower part of the chest.

*Physical signs* show the dull area to be about the same, but the pulsation to be less marked.

He left the hospital November 2nd and went to Southend, where he took a place as coffee-room waiter and carver, thus avoiding staircases and carrying heavy trays. One month after leaving the hospital he had a slight attack of dyspnoea accompanied by faintness while sitting, and this was repeated on several occasions, and lasted once as long as half an hour.

He was readmitted into the Brompton Hospital October 7th, 1886, with marked stridor in his breathing; more perceptible still on deep inspiration. Respirations were slow: about 12. Pulse 70 to 80; occasionally intermittent; the left pulse weaker than right. The left pupil larger than the right. There is now marked dysphagia on swallowing solids. He stated that he had persevered with the iodide of potassium during the greater part of the last year.

*Physical Signs.*—There is now no pulsation visible or perceptible except after exertion, when a general diffused heaving of the sternum is noticed. The area of dulness has the same limits, but the tone is more wooden. The cardiac dulness is increased downwards and towards the sternum, and the impulse is felt in the sixth interspace to the left of the mammary vertical line. A loud systolic murmur is audible over the sternum and left chest from the clavicle to the lower border of the third rib, extending about 1 inch to the right of the median line; this is also heard in the left carotid. Loud stridulous breathing is audible over the upper half of the front chest, most marked over the first portion of the sternum; it is also heard to a less extent above both scapulæ. The second sound of the heart is accentuated.

At my request Dr. Percy Kidd examined the larynx, and gave the following report:—"There is scarcely any respiratory movement of the larynx up and down. Slight general congestion of the laryngeal membrane. The right vocal cord moves perfectly in respiration and phonation; the left vocal cord stands immovable in cadaveric position, midway between extreme adduction and abduction, *i.e.*, there is complete paralysis of adductors and abductors from pressure on the left recurrent laryngeal nerve. The trachea is red."

The sphygmographic tracings taken by my clinical assistant, Dr. Willis, show a very marked difference between the two radial pulses.

The changes in the aneurismal pressure in this case are of considerable interest. The transverse portion of the aorta was evidently that effected, and at first the tumour seems to have pressed forwards, giving rise to the pulsation in the three intercostal spaces of the left chest, and slightly backwards, causing dysphagia. During the patient's first stay in the hospital, under rest and good food, the pulsation lessened and the dysphagia ceased. He improved greatly, gaining 1 stone in weight, but shortly before leaving, the inequality in the size of the pupils showed that some pressure was exerted on the sympathetic; and, curiously, it affected the eyes alternately, for one day the left pupil alone was contracted, and a week later the right alone.

At the time of leaving the hospital a year ago there was no difference in the pulses, and practically no signs of the left recurrent laryngeal nerve being involved.

Considering the disappearance of the pulsation and of the dysphagia, we may fairly conclude that the aneurism was not then extending, and that the front portion of the sac had become solid through formation of a clot; this view is confirmed by the patient being able to return to a certain amount of duty as a waiter, and by the period which elapsed before he again applied at the hospital for admission.

When readmitted, while the consolidation of the tumour in front was as well marked as ever, its extension upwards and possibly backwards was clearly demonstrated by the return of the dysphagia, the weakening of the left pulse, also shown by the sphygmographic tracings, and, lastly, by the symptoms of pressure on the recurrent laryngeal nerve and the sympathetic, namely, the fixation of the left vocal cord, the stridulous breathing, and the dilatation of the left pupil.

We note, too, that the increase in the size of the aneurism gave rise to compensatory enlargement and hypertrophy of the left ventricle, and hence the position of the apex being considerably lower than the normal limit. The loud systolic murmur, heard more clearly in the left carotid than in the right, indicates the portion of the transverse aorta which is at this moment undergoing dilatation, and, judging by the persistent stridor, there would appear to be pressure on the trachea itself, in addition to that on the left recurrent nerve.

The patient has taken iodide of potassium in doses of 5 to 10 grs.

three times a day for upwards of a year, and has as yet shown no symptoms of iodism. When in the hospital before, he was five weeks in bed and restricted for the rest of the time to living on one floor, and lying down for several hours a day, given no stimulant, but fed tolerably well. It will now be necessary to enjoin more complete rest, but, before doing so, I thought I should like to show him to the Fellows of this Society.

Dr. SYMES THOMPSON said it was a satisfaction to have Dr. Williams's opinion on the treatment of these cases other than by iodide of potassium. There was a great deal of evidence to show that low diet and perfect rest without the action of the iodide, has had good effects in some cases, though, in his opinion, there were a great many cases in which the drug proved useful. In one case the pulsation considerably diminished, the dulness lessened, and the patient, after about two months, was able to return to his occupation, though after a time he developed aphasia from cerebral embolism. So that, however satisfactorily the patient may appear to be going on, yet complications may happen which interfere with the results.

Mr. CARTER said Mr. Tuffnell made every arrangement that the patient should have perfect rest, and not make the slightest movement, or exert either hand or foot. He also made special arrangements that the bed should not be disturbed, and had a special way of managing the excreta. He (Mr. Carter) knew of one case in which this elaborate treatment was carried out to the letter, but with no good result whatever—the patient dying. Here potassium iodide was given, not only on account of the aneurism, but because the patient had had syphilis years before. Army surgeons constantly gave it in aneurism with a specific taint, and were satisfied as to its value.

## A CASE OF POUCH OF THE PENILE URETHRA.

By E. HURRY FENWICK, F.R.C.S.

THIS patient, whose age is 57, has suffered from stricture for the last eighteen years. A year and a half ago the difficulty of micturition culminated in extravasation of urine, for which he was admitted into the London Hospital under the care of my colleague, Mr. McCarthy. A perineal incision was made, and one large irregular stone and seven small faceted ones were removed from a pouch of pus and urine, which had taken the place of the urethra, immediately behind the obstructing stricture. The patient passed through a very grave crisis, but finally recovered, and left the hospital with a firm cicatrix in the perineum. Some months after he applied at my out-patients' department with

dribbling of urine, and a large hen's egg-sized pouch of the urethra was formed, situated  $2\frac{1}{2}$  inches from the meatus, and quite unconnected with the incision scar mentioned above. The patient does not remember this pouch at the time of the operation, but the rôle it plays in the dribbling of urine is an evident one. On evacuation of the contents of the bladder the pouch becomes distended, and retains about 3 ounces in its cavity when the urine has ceased to flow. Every movement of the thighs upon the penis now ejects a small quantity of urine. The pouch is slightly inflamed, for the urine is ammoniacal and loaded with triple phosphates and pus.

Pouches of the urethra as large as this are rare. Cases are recorded by Sir Charles Bell, Gross, Washington, and Atlee.

The interest of the case rests upon the formation of this pouch, and the treatment which should be adopted to remove it. We would submit that it is a dilated urethra behind an anterior stricture which existed at the time of the operation, but was masked by the inflammatory swelling consequent upon the extravasation, and that to cure it, seeing that catheterisation and irrigation have failed, the edges of the sac ought to be pared and united, while at the same time the bladder should be drained through the perineum.

Mr. J. H. MORGAN: The cause as given by Mr. Fenwick seems to be the correct one, but he would be inclined to use sounds rather than to suggest operative interference. The passage of these would probably stimulate the contractility of the pouch, and so lessen the inconvenience felt by the patient. This would be better than operation at his time of life, and with his condition of tissue.

Mr. BRUCE CLARK considered the case of much interest, but as the patient had not got a stricture, the sounds would hardly be of any avail. Recourse must be had to operation, excision would probably be the best mode, enabling the patient to pass his urine again with comfort.

## A CASE OF TUBERCULAR DISEASE OF THE TIBIA AND ANKLE JOINT (RIGHT) TREATED BY SCRAPING AWAY THE MEDULLA OF THE FORMER AND THE SYNOVIAL MEMBRANE OF THE LATTER.

By E. HURRY FENWICK, F.R.C.S.

CASES in which the medulla of bones have been thoroughly scraped away are few. Those recorded are to be found chiefly in

foreign literature, the operations having been performed for chronic osteomyelitis (Bleckwenn, Stoll, Petrowski, C. B. Keetley). I deemed the following case to be worthy of the notice of the Society, not only from the novelty and success of the above-mentioned procedure which it exemplifies, but also because there was combined with that procedure a new operation of Volkmann's (Halle) for treating tubercular joints. This latter operation is called by him *Anthrectomia synovialis*, and consists in the total extirpation of the diseased capsule of a joint with preservation of the bony epiphyses. It will be seen that the ankle joint in this case was submitted to a modification of this process with complete success.

This little girl, aged 2, of typical strumous aspect and build, came under my care at the London Hospital in August, 1885. When I first saw her, the right leg presented the following appearance: "The lower half of the right leg is swollen and inflamed, extremely tender. An inch above the internal malleolus there is the opening of a deep sinus, with large flabby granulations bordering it. Probing reveals caries. The ankle joint is swollen and tender, its movements are restricted; the appearance of the joint is that of a 'tumor albus,' with a tendency to suppurate."

The history of the case was as follows: "The child springs from healthy stock; is the first and only child of moderately well-to-do people of the lower middle class; always well fed. Ten months ago, without any assignable cause, the leg began to swell and cause pain, and the little patient lost flesh. She was taken to a Children's Hospital six months ago, and an incision was there made over the lower end of tibia. The wound never closed. She was an in-patient three months."

The diagnosis was easy, disease of lower end of tibia, probably tubercular, with subsequent invasion of the ankle joint. Resection of the ankle, with amputation if necessary, was proposed to and accepted by the parents.

An incision was made over the sinus, and the spongy periosteum raised from the bone—the sinus was then seen as a rounded hole leading into the end of the tibia—cutting forceps rapidly enlarged the aperture, and a small central necrosis surrounded by a dense caseous material was found in the centre of the end of the bone and removed.

The ankle joint was then laid open by extending the incision

along the inner side, and the joint dislocated outwards, cleaned and examined.

The cartilage of the tibio-fibular part of the articulation lay loose in the cavity of the joint like a thin piece of orange-peel. The astragalus itself was bare, the synovial membrane was everywhere transformed into a spongy pink gelatinous material characteristic of a tubercular joint. With a Volkmann's spoon, and here and there with scalpel and forceps, this diseased structure was carefully removed. Finding the joint so distinctly tubercular, I re-examined the tibial wound, and found more caseous material present in the medullary canal, I took a long-handled Volkmann's spoon, and removed by scraping as much of the medulla up to the tibial tubercle as I could get away.

The inside of the bone was then plugged with strips of iodoform gauze, and the foot brought into a rectangular position, and there fixed by means of an appropriate splint. The wound was dressed with iodoform and wood wool.

The result exceeded my expectations. The medullary canal filled up with rapidity, the wound into the ankle joint healed in two months, and the child was discharged with a gum and chalk casing. The child is now before you, and I think you will agree with me that she is bright and in apparently good health. She limps slightly, but this is due to a shortening which exists, the left leg having grown slightly longer than the right. You will notice that the right tibia is thicker than the left one, and curiously enough, there is some movement at the right ankle joint —such as obtains in fibrous ankylosis. She wears an iron on that leg, to limit, if possible, the tendency to knock-knee on that side, a condition obviously induced by the difference in the length of the legs.

This case is a teaching one as regards the tolerance of the medulla. One is so taught to regard it as being highly resentful of interference that it has hitherto been treated with marked respect. The cases, however, in which the medulla has been scraped away, show what good results may be obtained, and there is no doubt that much conservative surgery will be the direct outcome of the knowledge now accumulating as to the pathological tendencies of the medulla, and the amount of operative interference it will submit to.

Mr. C. B. KEETLEY could testify to the safety with which osseous medulla could be removed, and it might almost be laid down as a law, that in any operation, excision or amputation, all the diseased medulla might be safely scraped out. That a fractured bone will unite when there is no medulla has been clearly shown, and also in a case of his own, one of osteomyelitis in which the medulla was liberally scraped away (the bone being broken at the operation); the interior of the bone was painted with a solution of iodoform and ether, and perchloride of mercury was also used. In about six weeks the bone was perfectly united. The patient died some time afterwards from another cause. Removal of medulla could be safely done in excision of joints. What was the use of medulla? Probably little if any. Birds did very well without it. It was more open to doubt whether we should scrape the interior of a bone in acute osteomyelitis, but he felt certain it would be harmless and would not mind doing it himself.

Mr. W. ADAMS thought the operation a great success, but how much that success depended on the taking away of the medulla he did not know. Might it not be due to the free incision into the ankle, and the scraping away of the diseased synovial membrane together with free drainage. He was an advocate of a large and free incision, scraping away the diseased membrane, and free drainage with antiseptic precautions. A case which he had thus treated was getting perfectly well with fibrous ankylosis.

Mr. CARTER had published one case which had not even ankylosis. It was a case of a miner, whom he had prepared for having an ankylosed knee, and left him lying in bed with that impression. Visiting him next day, the patient was found sitting at dinner, and on enquiring the reason, the patient said a stiff leg would be of no use to him, so "he had taken hold of his ankle, and then setting his teeth to it, had drawn it up to his buttocks."

## A CASE OF CARCINOMA OF THE PROSTATE.

By E. HURRY FENWICK, F.R.C.S.

I HAVE brought this case before you, partly because of the rarity of the affection, and partly that I may have an opportunity of introducing to your notice a method which I employ to permanently retain an accurate record of the stages in the growth of the prostate, be that growth physiological, benign, or malignant. This method consists in making models in sculptors' clay of the prostate gland.

This man is 51 years of age. He is very fat, and apparently in good health. You will see that he is suffering from an enormous right-sided inguinal rupture, the size and shape of which reminds one of the head and neck of a sea lion. The measurements are as

follows:—24 inches in transverse circumference and 14 inches from the base, vertically downwards, to the lower margin of the tumour.

He has had a rupture for seven years, but up to six months ago, he was always able to reduce it, and keep it reduced, by means of a truss. It never was larger than a fist in size. Seven months ago his urine began to pass in a fine stream, and became thick and offensive. He strained greatly to get it away, and the rupture grew larger and larger with each succeeding effort. He was admitted into a hospital, and there much difficulty was experienced in introducing a catheter. Finally he left, passing No. 9 (E) coudée for himself. After each catheterisation he passed blood, the urine coming at first clear.

He applied last Saturday, October 21st, at St. Peter's Hospital, for relief of the hernia, and of the straining in passing water. On examination, the prostate was found to be enlarged in a manner similar to the model you have just seen me make, and which you have heard Mr. Morgan and others, who have also examined per rectum, verify.

The prostate is large, irregular, knobby, and of stony hardness. This is especially marked in the left lobe. The left vesicula seminalis is also involved, but not to so great an extent as the right. There is a small marble-shaped deposit, higher up, midway between the vesiculae, which is evidently an infiltration of the wall of the bladder. No calculus can be felt either with a sound or a steel-tipped coudée catheter. His urine is of specific gravity 1004, neutral, and contains muco-pus. Micturition is frequent (every hour). Vesical irrigation and catheterisation has not relieved it, the call evidently is prostatic, and is doubtless an exaggerated physiological act. He has lost two stone in weight in the last six months. This case is rare. There are about sixty recorded in medical literature since 1853, at which date Gross analysed the then collected material. Jolly has collected forty-one cases. Jamin has added sixteen, derived from various sources. This year, however, I have had under my care, or have made the post mortem examination of, nine cases, and without detaining you with the pathological or clinical deductions from these, and others which I have collected and added to the fifty-seven already at hand, I would submit that the most important lesson this case teaches us, is the imperative necessity for introducing a patient to catheter or

bougie life, if symptoms of difficulty of micturition coexist with hernial protrusion.

Mr. CARTER: Have the cases which Mr. Fenwick has seen had carcinoma of other organs? A gentleman came to him complaining of having frequently to get out of bed to pass water, who seemed to have cancer of the prostate, and who complained one day of giddiness, and on examining the eyes he found double optic neuritis. He had a strong scirrhus of the prostate, and probably of other organs. The swelling of the discs now amounted to 2 mm.

Mr. BOWREMAN JESSETT remarked that prostatic cancer was rare. Had these cases cystitis, and what was the treatment?

Mr. BRUCE CLARKE referred to the case of a man who died from pyæmia after cystotomy with secondary deposits in the lungs and one in the brain. He died from haemorrhage into the brain.

Dr. S. WEST saw a lad of about 19 or 20 years of age with haematuria from no known cause. Three weeks after admission he died from prostatic carcinoma as large as a man's fist. There were no secondary deposits. It is quite certain that there was no carcinoma until about three weeks previous to death.

Mr. FENWICK's reply: Most of his cases died from exhaustion or renal disease. Cancer of the prostate is said never to occur between the ages of 8 and 41, but Dr. West's case breaks this rule. It not infrequently happens that no secondary deposits are found. All cases require, sooner or later, catheterisation or vesical irrigation.

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November 1st, 1886.

## A DISCUSSION OF THE GENERAL PRINCIPLES INVOLVED IN THE OPERATION OF THE REMOVAL OF THE UTERINE APPENDAGES.

By LAWSON TAIT, F.R.C.S.

I AM induced to raise a discussion upon the general principles involved in the operation of removal of the uterine appendages before the Medical Society of London for two reasons. In the first place, it appears to me that the dignified position occupied by this Society, and its perfect freedom, so far as freedom can be obtained in such a matter, from anything like prejudice in favour of old views on the one hand, or a desire for improper innovation on the other, give a guarantee that such a discussion may be carried on before its members with a greater likelihood of a judicial consideration, and a greater certainty of arriving at a reliable and accurate verdict. Certainly we may expect this to be

the case rather than if the discussion were taking place either in a Society formed of men whose views became crystallised at a time when this recent innovation had no clear hold on the profession, or, on the other hand, before a Society which has enrolled amongst its members leading men in all parts of this country who have been concerned in the development of this new enterprise.

The second reason for my appearing here is that we have had a paper from the pen of Sir Spencer Wells in the 'International Journal of the Medical Sciences' for the past month, which indicates a much nearer approach to a common understanding upon this most important question than has yet appeared possible between the two schools of gynecology, the old and the new, and I really am almost tempted to confine what I have to say to the points raised by Sir Spencer Wells in that paper, and to differ but little from them, for in spite of the many passages of arms which have occurred upon this subject, and in spite of the hard words which have been used on both sides concerning our various views, no one is more anxious than I am to arrive at a conclusion which shall be satisfactory and honourable to my profession and safe to the patients committed to our care. I therefore desire to speak in terms of the strongest commendation concerning the paper which has been contributed by Sir Spencer Wells, and if I make a single qualification in that praise it will be confined to its peroration, where I think Sir Spencer has forgotten two things. The first is that part of his own history in which, until some twelve or thirteen years ago, he being the only operator for ovarian tumours who had anything like a reasonable measure of success, performed an enormous number of operations which only eighteen or twenty years ago were looked upon by men in the very front ranks of our profession as little short of butcheries. He gathered these large numbers to his operating table by reason of his relative success, and he must not forget that the same principle may possibly and charitably be extended to other operations in the hands of younger men, and that the numbers of these operations which seem to him to be open to some question by their largeness may be due exactly to the same cause which drew to him his own great *clientèle*.

The second is that the numbers of these operations may seem to him to be actually very great, but in any such operations the numbers can be only relative; and it is hardly worth while to discuss at first whether the numbers be too great or too small.

Let us settle the principles upon which the operations are to be performed, and then each operator will be called upon in his turn to justify the tables which he creates upon these admitted principles. In these discussions the uniform line of argument has been rather the reverse, quarrelling with the numbers and not listening to one word that was to be said in favour of the general principles upon which these numbers rested. Sir Spencer Wells is clearly at fault in such a line of criticism.

Under such conditions let me raise the first general principle concerned in these operations, namely, the one upon which their nomenclature is to be determined. The writers of various leading articles in medical newspapers within the last few months have made an endeavour to confer upon these various operations the objectionable term of "spaying," and this choice was made clearly not for any purpose of scientific assistance in the settlement of any one of the numerous questions which arise concerning these operations, or for any other purpose whatever than to prove, if by any possibility it could prove, personally offensive to the men engaged in this kind of practice, and not only personally offensive but personally hurtful to them.

One well-known leader writer upon this subject in the most prominent medical journal of our country told us that all operations must have their nomenclature decided by their anatomical relations alone, and that no kind of intention on the part of the operator or method of his, and no kind of motive on which the operation was based, could in the least degree influence the name by which it was to be called. But the moment it was pointed out that if I am to be called a "spayer" because I remove the uterine appendages, then an obstetric physician, my friend, for example, Dr. John Williams, must be called an "abortion monger" because he occasionally induces premature labour. The offensive incorrectness of the word "spaying" was in this way easily settled, and I hope we have heard the last of it.

There comes now the introduction into the English literature of the word "castration" as copied from the German and French, and it forms the title of the articles contributed to the 'International Journal' by Sir Spencer Wells, Dr. Hegar, and Dr. Battey. This phrase is just as much open to objection as the other, although its use can hardly be regarded as being burdened with the same intentional affront. But let anyone take down

any volume of surgery upon which they can lay their hands, and turn to the definition of the operation of castration, and they will find that it is retained exclusively for the male. Now an operation so simple as castration in the male must not, for strong anatomical reasons, be confounded with the operation of a far more serious and far more difficult kind when it is intended to remove the essential organs of a female patient. The anatomical relations of the removal of the human testicle and the human ovary are as opposite as things can well be. Further, it is quite open to doubt that the ovary is the analogue to the testicle. There is no such operation that I ever heard of in the male corresponding to the operation for removing the Fallopian tubes in the female, and as castration is confined absolutely, in the English language, to the simple removal of the testicle, if it is to be extended to the female it must be confined to the operation of removing an ovary, and to the removal of an ovary which is perfectly healthy. If it is not to be confined to the removal of an ovary which is perfectly healthy, then it must become the generic term for the removal of the ovary and ovaries under all conceivable circumstances, for this simple reason, that if it is not so then you will have to draw such an artificial and absurd line as Hegar attempts when he says that "we understand by the term castration the removal of normal or degenerated ovaries, not, however, including those which have developed into large tumours." Where are we to draw a line as to what is a large tumour not to be called castration, and a small tumour which is to be so called? Some of the most terrible operations of the class generally called "ovariotomies" are for small dermoid tumours, not much bigger than an orange, which give rise to intolerable pain and abscesses throughout the pelvis. Is such an operation as this, one of the most serious abdominal sections which we may be called upon to perform, is this to be called castration? The thing is too absurd to be listened to for a moment. Again, an overwhelmingly large number of my own operations are performed for removal of a diseased tube, in which the ovary may be so little affected, or even if considerably affected, would be so rapidly cured by arrest of the periodic congestion of the pelvic organs by arrest of the function of menstruation, that its removal is a matter of the utmost indifference. If I remove one suppurating Fallopian tube or both tubes so affected and leave both ovaries, as I very often do, how can it be called a case of castration when I do not comply with the prime

fact which is expressed in the use of this word? Also let me further point out that the word castration had its origin in the mutilation of the lower animals for the purpose of our food supply, and I think it is a matter of regret that it ever has been introduced into human surgery. As applied to animals it means removal of both testicles, as applied to a man with a diseased testicle it probably in the vast majority of instances refers only to the removal of one. If applied to the female patient in the case of bleeding myomata, it must of necessity mean the double operation. If it refers to a case of pyosalpinx, it may mean either the single or double. Now the nomenclature which I have suggested, and for which I must plead for a favourable consideration, is the use of the term "removal of the uterine appendages" to cover every kind of operation of that nature. I would yield a question upon which I hold some views for the destruction of the word "ovariotomy," and almost for the destruction of the word "oophorectomy," but I almost think that neither of these words would be necessary if the generic term "removal of the uterine appendages" were adopted, for you have only to use this phrase and to specify the disease for which the operation is done, and in one or two instances to specify the extent to which the removal has been carried, and the classification becomes a matter of the greatest ease. Thus I am habituated in my published tables to speak of removal of the uterine appendages "for myoma." That means the double operation, for a single operation would be an absurdity unless there was a congenital absence of the appendages on one side. Then I speak of removal of the uterine appendages for chronic inflammatory disease, that may be either unilateral or bilateral, or it may mean removal of one tube or both tubes, as I have said, without the ovaries. Then, again, we speak of removal of the uterine appendages for "reflex conditions," and they of course again necessarily involve the double operation; then we have the separate groups of removal of one ovary for cystoma, removal of both ovaries for cystoma, the removal of parovarian cysts, and hysterectomy, and in this way we get something like a common logical nomenclature under which by far the greater number of abdominal sections can be ranged, and operations in connection with both ovaries and tubes can be counted in either group. There are of course, as in every kind of classification in every subject of human study, instances where it is with the utmost difficulty that you can say into which group

they really ought to go. Thus, for example, you may have a large myoma, and you begin your operation for the purpose of removing the uterine appendages to arrest the bleeding of that myoma. Then when you get inside you may find two large cystic ovaries, larger even than the myoma, and you are puzzled to say whether you have removed two cystic ovaries or whether you have removed the uterine appendages for a myoma, and some kind of latitude must be allowed to each tabulator as to how he groups such border-land cases. To show how difficult classification by nomenclature really is, Dr. Meadows has raised a difficulty by alluding to the fact, which really cannot be disputed if we examine the question by the strictest canon, that the uterus is an appendage to the ovary, and not the ovary an appendage to the uterus. But this is carrying the matter unnecessarily far. For generations we have spoken of the uterus and its appendages, and we may continue to do so without harm. If we reversed the nomenclature in this particular we should have to construct a theoretically bifid uterus, and regard the half of a woman and the corresponding half of some man as the proper annexa to every human ovary.

The next general question in connection with this subject upon which I want to speak is raised by Sir Spencer Wells in the first paragraph of his paper, where it is noted as 'Castration in Mental and Nervous Diseases.' Although I have a very large share in Sir Spencer Wells' conclusions, I must say that I regret that he has said so very little upon removal of the uterine appendages in mental and nervous diseases, and has said such a very great deal upon their removal for other conditions. Speaking of its application *without distinction of cases*, he tells us that "this operation has an import which attaches to no other surgical operation. It not only puts in jeopardy the life of the individual on whom it is performed, but it involves the certainty of non-production of the whole series of beings that might result from man's obedience to the first command of his Creator, 'be fruitful and multiply.' Its potential fatality as regards the subject of it sinks into insignificance when compared with the absolute extinguishment of one line of the species." Sir Spencer seems to regard this injunction as a "twelfth commandment." For the other eleven mankind has not been remarkable for compliance. In this, however, he has erred on the side of excess of obedience. Here, also, I regret to say that I think Sir Spencer Wells has given a very insufficient

consideration to the one great fact which has been laid down by every writer, without exception, upon this subject, that in the great majority, I think in 95 per cent., of the cases of various kinds which are suitable for this operation, sterility has already been secured by the disease for which the operation is performed. He says himself concerning myomata, for example, that "they interfere with fecundity." I think it must be admitted by anyone who knows anything about these diseases, that in the great majority of cases they absolutely destroy the possibility of maternity.

I have a great belief in the opinions of women upon all matters concerning their own sex. Here is the opinion of a very clever woman on this subject, Dr. Mary Dixon Jones, of Brooklyn. She has operated on a number of cases, by removal of the appendages, with great success, and says: "But lately there is a great hue and cry about the possible future baby. They do not stop to think of the countless number of women who are barren and childless for years from various forms of uterine disease, 'a drop may stop a dynasty.' When women are suffering from hopelessly diseased tubes and ovaries they must not be 'unsexed,' they must continue years in torment and misery and inability for any kind of employment or avocation, because perhaps in the diseased ovary there may be a healthy follicle, which may contain a healthy ovum, which may find its way through a possibly diseased tube, and *possibly* find other favourable conditions, like Mrs. Toodles, who purchased a door-plate on which was cut the name of Thompson, because she might have a daughter, she might grow up, and might marry a man by that name. Removing diseased uterine appendages is not unsexing a woman, it is restoring her from helpless invalidism to all the possibilities and opportunities of life and labour. It is not taking away the possibility of her having children, that has already been done by disease, it is only removing a cause of suffering" ('New York Medical Record,' Aug. 21, 1886).

Many writers say that myoma is not in any way a fatal disease. Dr. Keith persists in his belief that it has no risk to life at all, but if so, why does he publish such long tables of hysterectomies with a mortality of 12 or 13 per cent.? The sufferings and risks of myoma have been, in my opinion, greatly overlooked, and when we see a patient suffering intense pain and profuse loss at each menstrual period, with a tumour growing and occurring at such an

age as that it is likely to grow, why should we hesitate to grant her relief? We can secure that relief for the patient, and secure the diminution or disappearance of the growth, by the arrest of that bleeding, with a certainty as great as anything of which we can speak in surgery, by means of an operation which now has its mortality reduced to less than 2 per cent. It is a matter for the patient's judgment to decide as to whether she will or will not adopt that line of treatment, and it is not to be wondered at that, under such circumstances, the patients accept the treatment, and that large numbers of them come from all parts of the world to submit to it. Therefore I hold with the belief contained in the general conclusions at the end of Sir Spencer Wells' article, that "The operation, which I shall call removal of the uterine appendages, is one which should be advised in some cases of uterine fibroids and in uncontrollable uterine haemorrhage." On this principle Sir Spencer and I are in accord.

I accept again with equal pleasure his second conclusion, that "it is to be resorted to in certain malformations of the genital organs, deformities of the pelvis, and accidental obstructions of the vagina." Of course here again sterility is absolutely involved, and we clear away the great bulk of the argument against the operation which Sir Spencer Wells asserts in the first sentence of his paper.

Sir Spencer Wells' third conclusion is one upon which I think a very great deal might be said. It is that, "the right to use this operation is very limited in cases of ovarian dysmenorrhœa or neuralgia, and only when they have resisted all treatment, and life or reason is endangered." I for one have become extremely sceptical that there is such a thing as ovarian dysmenorrhœa, because when ovaries are bound down by adhesions due to old perimetritis the uterus is nearly always similarly bound down. I am now disposed to believe that although much pain will be given during the development of a follicle, its rupture and the dehiscence of the ovum when the ovaries are so bound down, yet that the intense pain is not ovarian but uterine and tubal. Such cases I believe there are where life is not threatened, but they do resist all other kinds of treatment, and reason is often endangered by the sufferings which the patients undergo. Therefore, as the removal of the uterine appendages and arrest of menstruation is the only permanent and complete cure for such cases, the only

means of securing physiological and complete rest for them, I am disposed to accept Sir Spencer Wells' conclusion, but to extend it largely to certain cases which seem to have escaped his notice. These are precisely the kind of cases which occur with greater frequency in the lower ranks of life. It will happen frequently to have such a case sent one in a servant girl, or a governess, or a girl who has been kept standing the best days of her young life behind a counter, with the story of intense menstrual suffering and absolute inability in many of them to keep any one situation more than a few months, by reason of the fact that their employers soon get tired of their recurrent invalidism. Remove the uterine appendages and stop the suffering, and you give such a patient a new life, because previously it was impossible for her to earn her living, and do her work in her ordinary avocation. If the whole question is put to her as it ought to be, with perfect sincerity and plainness, if her sufferings are genuine she will accept the operation as her last resource. I entirely agree with Sir Spencer Wells, and it has been my guiding rule and practice in such cases to do the operation only when they have resisted all other treatment. But the treatment by rest and methods of luxury, which is really the only treatment likely to be successful, is an absolute impossibility in any cases save those who are well endowed with the good things of this life. For the poorer classes there is nothing but the operation which will give them permanent security in the obstinate class of cases.

Sir Spencer Wells' fourth conclusion is, that "in nearly all cases of nervous excitement and madness it is inadmissible." There I am disposed for the present at least to agree with him. I have tried it, as I have said in my publications on this subject, in six cases of pronounced menstrual epilepsy. That is to say, in cases of epilepsy in which the attacks were confined to the menstrual periods. They were all benefited most undoubtedly, but none of them were cured. They were all improved in health, and I think that if I were to judge for myself as a patient of that kind I should elect to have the operation done, but I could not, for one, continue to act upon Battey's principles, and therefore I have given up the practice of performing operations on nervous cases entirely; and shall only resume it when I have had the ground made perfectly and completely clear upon the numerous other and far more important questions involved in it.

The fifth conclusion recorded by Sir Spencer Wells is, that "it should never be done without the consent of a sane patient, to whom its consequences have been explained." I agree with the utmost emphasis that no operation of this, nor of any other kind, ought to be done without the most complete explanation of it to the patient, that is to say, that it should be made as clear to the patient as it possibly can be according to his or her degree of intelligence, and no such words as "spaying" or "castration" ought to be used to the public, because if the intention is to convey the true nature and intention of the operation, such words as those convey meanings to the ignorant which are absolutely contrary to the intentions and purposes of this operation.

Finally the conclusion, number six, put on record by Sir Spencer Wells, that "the excision of morbid ovaries and appendages should be distinguished from "oöphorectomy," and it should not be done without the authority of consultation, as in most other cases of abdominal section," is one which I most clearly emphasize. But I want to draw Sir Spencer Wells' attention to this fact, that he has argued absolutely contrary to the chief force of his own conclusion, that the excision of morbid ovaries and appendages should be distinguished from oöphorectomy, and that chiefly in connection with my own work. He is kind enough to allude to me in the following way, the first time my work has attracted even the most passing notice from Sir Spencer Wells' pen, and I must protest against the complete misrepresentation to which he subjects me: in fact, he makes me advocate and practise what I have unceasingly raised my voice against. He is speaking all through about what he calls "oöphorectomy" or "castration," and it is clear he means what Battey most unfortunately called "normal ovariotomy."

"On the 1st of August, 1872, a few days after Hegar's operation, Tait, of Birmingham, is reported to have also removed two ovaries from a woman who was sinking from irrepressible haemorrhages due to uterine enlargement or tumour. She recovered and was better two years afterwards. In the course of the next year it is also recorded that he did three more similar operations. In two of the cases he took away only one ovary. That was imperfect castration--not the complete operation of Hegar. The want of appreciation of Hegar's motive for the operation is evident." Here Sir Spencer forcibly illustrates my argument against the

introduction of the word "castration," for it has led him in this case into a most absurd mistake. Had he turned to the table of cases from which he has quoted—apparently from memory—he would have seen that the first date was February 11, 1872, nearly six months before Hegar's case. He would also have seen that in the three cases in which he says I did not appreciate Hegar's motive, I removed one ovary because it was diseased and left the other because it was healthy, and in all three I cured my patients. Curiously enough, Sir Spencer saw one of these cases with me. The principle involved was wholly different from that independently arrived at and acted upon by Hegar and myself—within five days of each other—concerning the treatment of bleeding myoma. The principle in these three cases, mistaken by Sir Spencer, was the primary new departure of removing an ovary for pain or distress independently of the size of the diseased organ, and independently of life being threatened. In the first of these cases the ovary was only as big as a hen's egg, and was the subject of chronic inflammation and abscess. Its removal entirely relieved the patient of pain. In any case I must protest against these three cases being called "oophorectomies," or "castrations," or "normal ovariotomies," or "Battey's operation," or any other name which does not mean that they were cases of removal of ovaries just as much diseased as if they were the biggest cystomata which could be found in our lists.

Still speaking of "oophorectomy," Sir Spencer says: "Tait, of Birmingham, has been identified with it from the beginning. He has modified it and extended its application. Many others have followed in his steps: some have tried to outstrip him. The ovaries and their appendages now go the same way, and the meshes of the physical, mental, and moral network of reasons why the operation should be done are so closely woven that few cases of a perplexing nature that can anyhow be connected with the generative organs or functions, have a chance of escaping laparotomy or something more. \* \* \* The oophorectomists of civilisation touch hands with the aboriginal spayers of New Zealand."

This kind of writing reminds me of nothing so much as Dean Ramsay's Scotch laird, who, when in a rage, went out into the street and swore "at large." It has no other intent. But I object altogether to have my name mixed up with such nonsense

when I have over and over again protested against the doctrines and practices here by implication fathered upon me. Sir Spencer Wells' confusion arises out of his erroneous nomenclature and a want of precision on his part in recognising clearly the logical effect of principles which he himself to a very large extent admits. To follow these principles carefully is a much more difficult matter than Sir Spencer imagines, and nearly every new writer on the subject agrees that "removal of the appendages," "oophorectomy," "castration," "normal ovariotomy," or whatever it may be called, is an uniform proceeding, simple alike in its character and its performance, and for its performance requiring unskilled hands and a slipshod understanding of it. Therefore I have been continually crying out warnings which have not been listened to. Perhaps those of Sir Spencer Wells may have more heed paid to them, but I object to him directing them at me.

In defence of this protest, let me quote from my original paper, which Sir Spencer heard at the International Congress in 1881, and of which I gave him at the time a printed copy. Speaking of the cases operated upon for chronic irreparable inflammatory disease, I said that "in four out of thirty-two cases it was impossible to complete the operation, and that operations of this kind were far more difficult than operations for cystoma." All my subsequent experience confirms this. Speaking at Edinburgh in February last, in answer to several writers who had made the same confusion as that perpetrated by Sir Spencer Wells, I said: "*Normal ovariotomy* is an operation requiring no skill, little experience, and hardly any judgment, and therefore has been extensively and I fear somewhat indiscriminately practised. I have protested again and again against it, yet many whose voices are no louder against it than my own blame me for it, accuse me of doing it, and generally get confused over the whole subject. I desire once more to say that, save when the seat of such organic disease as will explain genuine suffering, the uterine appendages ought not to be removed, and that those who attribute all the pelvic aches and ailments of women to the ovaries and tubes, and rush in to remove them, are dangerous people. I don't say they are dishonest, but I say they are misguided. This kind of laparotomy epidemic is no worse, however, and certainly not more harmful, than the tenotomy epidemic, which spread all over the world when Diefenbach first introduced his brilliant and serviceable operations. Every oblique

eye was made more oblique on another axis, and many club feet were hopelessly destroyed—results to be deplored, but common enough in all instances of human progress. New things, specially new drugs, are always done to death, and I greatly fear that indiscretion with such a new drug as chloral has done more harm than all the surgical indiscretions collectively."

Again, writing in answer to Dr. Henry C. Coe, of New York, who was also guilty of the same mixing up of cases which I do not approve of with those in which I advocate operative proceedings, I wrote as follows in the 'American Journal of Medical Sciences' of September last:—"I think I have great reason to complain of the confusion into which Dr. Henry C. Coe has fallen—a confusion which he summarises in the seventh deduction at the end of his paper, and which he regards, he says, as legitimate. It is as follows:—'The present enthusiasm in this country in favour of Tait's operation will not endure, because it will eventually be discovered that the number of permanent cures is entirely out of proportion to the number of operations.' I wish to say that what he has described throughout his paper with, so far as I can see, quite a small number of exceptions, is not 'Tait's operation' at all, but it is an operation upon which Tait desires now, for at least the twentieth time, to enter a most earnest protest.

"I have again to protest against the use of the word 'oophorectomy,' as employed by Dr. Coe, because there has grown up associated with that name a number of vague ideas which are misleading from their very vagueness, and the impossibility, which is evident everywhere, of separating and clearly defining them. Thus it is clear from Dr. Coe's paper, which is written by a pathologist ambitious of pronouncing from a pathological standpoint a decision upon a surgical question (a feat which is wholly impossible), that he has not yet achieved a complete idea of the fact that 'oophorectomy,' as he calls it, includes a lot of perfectly different things. Thus, it may be an operation for a uterine myoma, or for a case of reflex trouble, as designed by Battey, and again an operation for chronic inflammatory pelvic trouble; and all these are absolutely different in every conceivable way. The pathology of the three classes is different, the theory upon which the operation in each case rests is widely divergent from each of the other two, and finally the clinical histories of the patients and the technique by which their diseases are to be relieved pre-

sent irreconcilable differences. Until, therefore, Dr. Coe has got this idea into his mind and drops the use of the word 'oophorectomy,' it is really perfectly impossible for him to understand the bearings of the discussion."

In a rejoinder to my letter Dr. Coe has frankly admitted the completeness of my argument, and probably, in America at least, for the future we shall have a closer adhesion to logical statement, and I shall not be blamed for what I protest most loudly against.

At page 466 of the 'International Journal,' Sir Spencer Wells asks, "Who can diagnosticate with certainty the presence of irreparable disease in these out-of-the-way organs?" I answer that I did it in October, 1871, in the instance of this patient, and that I have done it hundreds of times since, have taught dozens of other men to do it, and I could teach Sir Spencer himself if he would come to Birmingham for the purpose. Some people seem to be able to teach themselves from my writings or other sources, for I am constantly getting papers sent to me with accounts of successful operations in all parts of the world, with the diagnosis previously and correctly made. Let Sir Spencer Wells read Dr. Mary Dixon Jones's article in the 'New York Medical Record,' and he will see how a woman can understand, recognise, and successfully treat the troubles of these out-of-the-way organs when the subject of irreparable diseases. I hold in my hand the last number of the 'Columbus Medical Journal,' and I find there conclusive evidence from Professor Reed, of Cincinnati, that pyosalpinx exists, can be recognised, and treated in Ohio. In Germany they diagnose these cases. In France, India, Australia, Japan, Spain, Canada, and everywhere throughout the States the cases are found in numbers and successfully treated; how is it that Sir Spencer Wells alone confesses his inability to recognise them?

Dr. Mary Dixon Jones ends her testimony with this remarkable sentence, which I give even at the risk of a charge of egotism. "There is no advance made in modern surgery that will do more good, save more lives, or relieve more suffering; or add more to the sum of human life or human happiness than this one operation known as 'Tait's operation.' It will save more lives than ovariotomy, because more need it."

We now come to the final point for discussion, not one of general principle, but one of detail, and therefore one which ought to be introduced here. Its introduction is however inevitable, for it is

the *ὕστερον* which has been misplaced for the *πρότερον*. I mean the number of cases of removal of the appendages for all sorts of motives which are performed. On this let me repeat what I have already said in 'Munde's Journal' (September, 1886).

"Upon the whole of this question I do not pretend to say that unnecessary, and therefore improper, operations are not being performed; unfortunately I know they are, but it is due not to the principles of the operation, nor to anything concerning the operation itself, but simply to the inherent tendency to error which prevails in everything that is human. Everybody now seems to be desirous (especially on your side of the Atlantic) of opening the abdomen, and so long as this is the case the production of specimens which do not justify their removal will be inevitable. But when an operation is put in the hands of responsible people, whose reputation and personal existence will be made to depend upon their thoroughly understanding the principles upon which the operation should be performed, and which should not be departed from, this tendency to human error will be diminished. That it ever can be removed entirely is impossible, because unjustifiable and improper operations are just as common upon the operating table of the general hospital as they are upon that of the gynecological department."

Of Dr. Coe's paper let me say that its title "Is Disease of the Uterine Appendages as frequent as it has been represented?" reminds me very much of the characteristic statement that "the thing is about as big as a lump of chalk." I do not know who has made any representation as to the frequency of disease of the uterine appendages, neither do I know in what population any statistics on the subject can be obtained. The varying frequency of operations for diseases of the uterine appendages must, of course, be in the practice of different men entirely relative. In my own practice these operations are extremely frequent, because I tap the *clientèle* of the whole world; they come and have come from almost every country under the sun. I can easily imagine, therefore, that, compared with the practice of some men who have not given so much attention to this particular department of surgery, they are enormously frequent in my practice. But even I would not venture for a moment to make any kind of statement as to what their absolute as compared with their relative frequency really is. Indeed, I have not the faintest notion. But, taking it

even from the purely pathological standpoint, which is evidently that occupied by Dr. Coe, it is proved beyond doubt that their frequency is great; and not only is their frequency great, but their mortality is terrible.

Let us take the only two investigations which have up to the present time been made from anything but a surgical standpoint. Dr. Kingston Fowler in three years found fifteen cases of pyosalpinx (leaving out of the question altogether the minor troubles which do not and cannot, save by the merest accident, appear on the post-mortem table) in the Middlesex Hospital, and of these eight had been fatal from peritonitis due to rupture of the pyosalpinx. Still more recently, and still more forcibly, comes the argument propounded by Dr. Grigg, who, out of five deaths which occurred within a certain period in the practice of the Queen Charlotte Lying-in Hospital—and these five were all the deaths that occurred in that period—found that four were due to chronic lesion of the uterine appendages. But for the careful examination made at Dr. Grigg's special request by Dr. Allchin, every one of these four cases would have been set down as ordinary puerperal fever; and how can we tell, unless more frequent post-mortem investigations are made in puerperal cases, that these murderous diseases of the appendages are not of infinitely more common occurrence than we imagine? No sooner does a woman get a tympanitic abdomen and feverish symptoms after a labour than it is the practice to immediately pronounce it a case of septicæmia, whereas my belief is, and the belief is sustained absolutely by Dr. Grigg's experience, that if the abdomen were promptly opened and causes searched for, not only would the word septicæmia be to a large extent banished, but we might be able to save lives which up to the present moment have been sacrificed!

I remember very well when Laurence, Tyler Smith, Syme, and Miller united in saying that all abdominal surgery was abominable surgery, and even harder things than that. Then there came a time when Wells was doing his hundreds of abdominal sections, and nobody else touching the work in anything but a tentative way. Suppose in 1868 some one asserted that it was not the principle of ovariotomy that was wrong but the fact that Mr. Spencer Wells did so many, Mr. Wells' answer would have been, come and see the cases done. The objector would have had two courses, either to accept the invitation or refuse it. If he had accepted he

would have been converted, if had refused he would have been disregarded. I have offered the same challenge to all my objectors. Those who accept the invitation go away and do likewise; those who decline I disregard.

It is pleasant to find after all this, that upon the general question, that such operations should not be done without consultation, I am perfectly agreed with Sir Spencer Wells. But then I must plead that consultations in some cases are eminently farcical, because the eminent persons summoned to the interview arrive there prejudiced against such operations as we are now discussing. In order that there may be no mistake as to my meaning I shall give cases and names. Some months ago I was called to see an American lady at one of the hotels in London. She had come over specially for the purpose of having my opinion on the proposal that her appendages should be removed on account of intolerable suffering for which she had been under the care of all the gynecologists of Europe and America, from Marion Sims downwards for twenty-five years. In order that everything should be done that caution could suggest no fewer than six of us were engaged in that consultation. I satisfied myself very soon that the operation ought to be done, but all I could get out of my senior colleague, a physician, was that there was nothing the matter with the patient, that she should be put under the care of some good doctor and made to dance for twelve months. Another physician was more cautious but not more lucid. The operation was accepted by the patient and friends, and was performed by Dr. Keith, who, in a letter to me, abundantly justified its performance by the conditions found in the pelvis.

All I can say is, that in such a case as this there is not a practitioner in the midland district known to me who would have withheld his sanction to the operation proposed.

Again, at least one distinguished surgeon seems to me similarly prejudiced. I have in my pocket a letter from him to the family doctor of a lady who has a myoma as big as a baby's head. Six months ago it was a small thing in the pelvis, eighteen months ago there were no symptoms at all. She bleeds profusely at her periods and suffers greatly, and I agreed with her doctor in advising removal of the appendages. By her friends' advice she went to see this eminent surgeon who expressed his opinion that "at her age, 42, it is not likely to increase much, and after the cessa-

tion of the catamenia will undergo senile atrophy. So I would certainly not operate at present." In such an opinion as this its author is clearly imbued with the old and deterrent influence of high ovariotomy mortality. If in order to obtain relief from her symptoms this patient had to run the risk of a 25 per cent. mortality, no human eloquence could justify it, nor even I think with a  $12\frac{1}{2}$  percentage. But when I can show her that the risk is little more than 1 per cent. I show her relief at a price so favourable that I can only look upon her as a fool if she does not accept it. In my own district men send me such cases, with deliberate requests for operation, by the dozen. They see by past experience how much is gained at infinitely small cost. When I find Dr. Matthews Duncan and Sir Spencer Wells interfering with what I believe to be the steps proper to be taken alike for the relief of our patients and the advance of our art, I utter fervent prayers that they may soon be brought into a better light, but I also tell my patients to avoid them and consult more reasonable men. In his paper in the 'International Journal' Sir Spencer Wells says the mortality of removal of the appendages is 14·6 per cent. I know not where he gets his figures, but my own published results and results up to date give three deaths in about 200 cases.

The editor of one of our medical journals has had the rashness to say that these operations are done for the sake of the fees and fame to be obtained by them. In a proper sense this is true of everything we do, but in the improper sense, which was clearly intended, the insinuation is too vile for discussion.

An attempt, dictated by what I regard as the worst of all motives, has been made in Liverpool to prejudice this question and to settle the problems of surgery in a court of law, met with an ignominious defeat. What I think of it is best given in a letter of singular power and eloquence received by me from one of the most promising young hospital surgeons of our country.

"The other day," he writes, "I saw a small vegetable cart presided over by an old woman, and bearing on one of its panels in large white letters the owner's name followed by the legend 'APRUVED CASTRATER AND SPAYER.' By some damnable perversion of motive a few men are seeking to represent human surgery as wandering about the country in a sort of quack caravan doing for the profit of its practitioner what this gelder is

doing for his—and the farmer's—profit. You know what I feel about the operation and how carefully I would hedge it round. But this outcry, and particularly Wells' paper in the 'International Journal' so handicaps a juvenile like myself that I feel like saying to every suffering or bleeding woman who wants relief 'Bleed, suffer, and die if you like; I won't touch you. I know I can cure you, but men you have trusted and enriched and be-titled say the diseased organs are sacred, and that the man who removes them is merely a profane seeker of gain. Go to these men and be cured; or bleed, suffer, and die unaided by a newer and better surgery than they can give you.'

"It is hard to avoid some such feeling as this in the case of a juvenile like myself," he continues: "Why are so many men with capacities for greatness so unspeakably little? Since the Liverpool business I have not done an operation of this sort. There is little satisfaction in doing an operation which one may be prosecuted for like a common swindler."

My friend has far too much courage to remain long in this state of mind, and I know he will soon return to work in which he has already achieved brilliant results, but it is the state of mind into which timid men may easily be driven and from which they may never emerge. There are, however, others of a different type, and I for one, supported as I am by the confidence of hundreds, I think I may say thousands, of my professional brethren who trust me with the lives of their most valued patients, with the lives of their own mothers and sisters and wives. I for one shall not deviate from the path I have cut out, and not all the outcry of men whom I regard as wholly prejudiced and to a large extent wilfully ignorant, nor the terrors of actions for damage, nor abusive letters in either medical or daily papers can make me swerve from what I believe my duty alike to my profession and my race.

Mr. CARTER was sure the Fellows would bestow the most careful and anxious consideration to the exceedingly able and interesting paper of Mr. Tait. Though there might be differences of opinion as to certain portions of it, all must yet recognize the clearness and ability with which he has stated his conclusions. He considered specialists might be regarded as exploring parties, who, travelling a certain distance afield, brought back to the main body conclusions to be accepted or rejected. This had been done by the President of the British Gynecological Society, who was reporting the results he had obtained to a general Medical Society. Many gentlemen might wish to confirm or to differ from the opinions put forward, and he requested them to compress their remarks within the number of minutes allowed by the laws to each speaker.

Dr. HALLIDAY CROOM desired, on behalf of the strangers present, to thank Mr. Tait for his valuable paper. In Edinburgh they appreciated the admirable work he had done. It would be well perhaps if Mr. Tait in a future paper pointed out the diagnostic signs of those cases which ought not to be operated on. In reference to the removal of the uterine appendages, few would doubt that ovariotomy was safe and right ; the same with Battey's operation, which, if done early, would do away with hysterectomy altogether. The tubes should also be removed in suppuration and gonorrhœal infection. But how was the line to be drawn in cases of inflammatory disease ? If one got a history of premenstrual pain with menorrhagia, dyspareunia, and sterility, we might expect disease of the appendages. If we could diagnose parametritic inflammation with matting down of tubes and ovaries, one would without doubt recommend removal of the appendages. But supposing such a case as the following presented itself :—"A woman had a child three years ago, and afterwards had an attack of inflammation. On examination, there are no definite signs of tubal disease, but an ovary is found inflamed and displaced." Should we operate ? Mr. Tait says he lets the patient draw the line for herself, but that surely is not fair ; because even though the patient might urge operative interference, yet much might perhaps be first done by mental, physical, and sexual rest. Mr. Tait also says they come to him as a *dernier ressort*, having been fruitlessly treated by other gynecologists in the first instance, but they came to him (Dr. Croom) first-handed, and what should be his rule ? Often, he thought, imperfect diagnosis led to erroneous operations. Some men could diagnose these conditions with only one hand. In Edinburgh it was thought to be a necessity thoroughly to do a bimanual pelvic examination before operation was decided on.

Mr. KNOWSLEY THORNTON wished to say in the first instance that he thought most of the Fellows would agree with the greater part of Mr. Tait's conclusions. But when he considered the title of the paper and examined his own general knowledge of these principles, he found that we had not really heard much from Mr. Tait about the principles. There had been much from him concerning his own experience, and many objections from him, but not much concerning principle. He gathered from Mr. Tait's early remarks that removal of the tubes would stop menstruation. Mr. Tait had given no evidence for this beyond his own dictum. The few cases he himself had been able to watch were decidedly opposed to this dictum ; one case in which the tubes were removed for large pyosalpinx still menstruated regularly ; but she had still the ovaries left. In another case in which he removed the ovaries and left the tubes, menstruation ceased. We wanted tables of each set of cases with their after-menstrual history. Mr. Tait advances a plea for including all these operations on the uterus and appendages under one heading. (Mr. Tait : Except ovariotomy.) If we attempted this, we should find ourselves in hopeless confusion. How should we distinguish cases affecting one tube or one ovary, or cases of hysterectomy ? Is each to be regarded as "uterine appendage ?" If we accepted a sweeping statement of this kind, we should be landed in a difficulty. Mr. Tait said that he had found a larger proportionate number of urgent cases among diseases of appendages than among ovarian tumours. His (Mr. Thornton's) own experience was the opposite. This was perhaps completely accounted for by Mr. Tait's great reputation in the treatment of diseases of the appendages. Mr. Tait said that one great objection (prevention of future

fecundity) to the operation was invalid, because sterility had already been caused by the disease. But was this the case? For he had recently removed both ovaries from a patient, and they had been converted into large dermoid tumours, and there could have been only the smallest fragment of healthy ovarian tissue left; yet this patient was pregnant at the time of the operation, and afterwards bore a healthy child. He thought Mr. Tait gave the most conclusive evidence against himself by quoting the Queen Charlotte's Hospital cases. He shows that five cases died of chronic ovarian disease, but they had nevertheless evidently been fertile women, for they had been admitted to that Hospital for the purpose of being delivered of children. Pyosalpinx was not fatal and not incurable in our limited experience here. Mr. Tait referred to the necessity of examining patients dead from puerperal fever, with a view to finding lesion of appendages, but then again puerperal fever patients were not sterile. Mr. Tait said the mortality of his operation was less than 2 per cent. This statement was to him (Mr. Thornton) most astonishing, unless Mr. Tait was referring solely to his own figures. He thought the mortality of these cases, if fairly published, amounted to nearer 15 or 20 per cent., or at least five times Mr. Tait's figures. Mr. Tait said he disbelieved in ovarian dysmenorrhœa, and he speaks as if in these cases the ovaries were altogether bound down. He himself had frequently seen cases of movable painful ovary, and they yielded a large number of cures with careful watching and treatment. Mr. Tait said he believed that the gynecologist often caused these cases, and he agreed entirely with this, and considered that if the case to which Mr. Tait had referred had not been seen and treated by all the obstetricians of Europe and America, she would probably not have ultimately come to the operating table. Removal of the tubes for myoma was not always a complete cure; in some cases the tumour grew again and bled after three or four years. The case Dr. Croom had quoted was the sort we wanted an opinion upon. In his experience they nearly always got cured without operation and often lost their lives under the knife, being allured by tales of the low mortality of the operation. There were a certain number of consulting men who were doing more than any one to make this branch of surgery reckless by deliberately shutting their eyes and refusing to listen to any argument. They arrived at the consultation with a predetermined conclusion that any ordinary operation in this region was improper and unjustifiable. They acted probably with the idea that they were really doing good, but they undoubtedly actually did an enormous amount of harm.

Mr. C. E. JENNINGS thought that if the question of operation is proposed to a patient, the nature of that operation should be explained thoroughly; we should not simply use such a term as "removal of ovaries." He referred to the case of a girl of 28, who consulted him two months ago with an enlarged uterus and fibroid tumour. He proposed to open the abdomen and remove the ovaries. This was done with the exception of a small fragment of one, but the metrorrhagia, though lessened, was not completely arrested.

Mr. ALBAN DORAN said that Mr. Tait showed at the Pathological Society some time ago a whole bottleful of tubes which had been removed with the best results. Before Mr. Tait had operated and Dr. Kingston Fowler had made his observations in the post-mortem room of the Middlesex Hospital such cases were considered mere curiosities. Looking to the future, would it not be possible to diagnose these cases earlier and relieve by operation instead of removing them? Recently he had been

engaged in investing another disease, viz., papilloma of the Fallopian tube, which was characterised by definite symptoms. Only two cases had previously been recorded (by Wiess in 1879 and Bantock in 1885), but probably now attention had been directed to it, many more would be found.

Dr. IMLACH considered the difficulty as presented by Dr. Croom was a practical one. Many of these cases could be diagnosed with one finger. If by a single finger a conclusion could not be arrived at, then a "bimanual" should be done, but his experience was, that cases which required and could bear that rarely required operation. If we were dealing with tubes filled with blood or pus, there was great danger of bursting them by doing a "bimanual." Mr. Thornton said that ovaritis ought not to be described as a cause of sterility. He himself thought the cause was usually in the tubes and not the ovaries, and there he agreed with Mr. Tait. In hydro- and pyo-salpinx one operated without interfering with the ovaries. Pure hydrosalpinx is, when large, so painful that patients themselves will ask for an operation. Hydrosalpinx was more common in elderly people, pyosalpinx in younger.

Dr. HEYWOOD SMITH thought that Mr. Tait and the rest of the Fellows should be glad that there were not more objections to the principles he had laid down, as an amount of bitterness had been infused into the discussion of this question, which was extremely deleterious. In describing an operation, it was unfair to put before the public words which conveyed a contrary meaning. Spaying and castration were terms used for totally different conditions. A number of cases which might be nipped in the bud by suitable treatment were overlooked, and thus later on required operation. He thought that in inflammatory conditions a fair time should be given to see if the inflammation would subside : the rich could afford this rest, but the poor could not afford the months and months of necessary rest. They had three courses before them ; to die of starvation, to burden their friends whilst waiting for the remote chance of a cure, or to submit to the operation.

Dr. BANTOCK had long been waiting for the sentimental side of this question to be brought before the public, and it had come. The objection was raised that the woman was unsexed. If by this was meant incapability of bearing children, it came too late, for sterility had already been effected by the disease. If it was meant that the woman was deprived of sexual desire and feeling, it was not true, and the contrary was often the case, for sexual feeling was always destroyed in acute and often in chronic diseases of the appendages. In acute and chronic pyosalpinx, haemosalpinx, hydrosalpinx, inflammatory obstruction of the tubes with adhesions, papilloma, chronic ovaritis, abscess and cirrhosis of ovary, the woman was often not only temporarily, but permanently barren, and had a positive distaste for sexual intercourse. The argument was raised, was the operation necessary ? If a case had been treated skilfully sufficiently long without amelioration, it was our duty to apply the resources of surgery. Mr. Tait has laid down a law, "If in doubt, open the abdomen." In this he had done himself an injustice, if not an injury. He owes it to himself to curb the zeal of his too enthusiastic followers.

Mr. TAIT, in reply, having expressed his gratitude to the Fellows for their reception of his paper, said he had often been incorrectly quoted. He had never said simply "when in doubt open the abdomen ; but "if a patient suffer from symptoms not relieved by skilful treatment, and *her life is endangered*, even though in doubt as to the actual nature of the case, open the abdomen." In the case Dr. Croom had quoted, if the case were so doubt-

ful, one would not at first operate, but try palliative treatment. Referring to the bimanual, he knew he had been blamed for neglecting it; but he would still say that in three out of five cases the nature of the affection was clear without it, and in the fourth and fifth he would not operate. With regard to the question of menstruation, Mr. Thornton had omitted to notice three papers of his on the subject. In the 'Medical Times and Gazette' he had shown that ovulation and menstruation are not concurrent. In one case in which he removed the bulk of the uterus with the tubes and ovaries, the patient menstruated still, so that as far as he was concerned the question was still *sub judice*. His impression, however, was that those in whom the tubes alone were removed most frequently ceased to menstruate. He thought that Mr. Thornton would not differ so widely from him in nomenclature when he had read the paper. His own statistics of the relative frequency of his operation were of course absurd, because such cases were specially sent to him from all parts of the world. Mr. Thornton had mistaken his point with regard to the Queen Charlotte's Hospital statistics. They referred to patients with unilateral disease, who were therefore only sterile on that side, and the danger came when they were pregnant, for during labour the diseased tube from pressure would burst. Dr. Grigg had shown that the risk was greater in unilateral pyosalpinx. The mortality of an operation was a totally different thing from the mortality of an operator. He had seen a table where 125 operations gave a 50 per cent. mortality, but then there were sixty-three operators. The proper mortality of an operation is the lowest figure any operator is capable of producing. Agnew's statistics of the mortality of the operation for removal of the appendages is 37 per cent., but those are the combined figures of a number of operators jumbled together. He disbelieved in ovarian dysmenorrhoea; he was sceptical, because when the abdomen was opened and an examination made, adhesions were generally found. Many of his cases of myoma distressed him, because they took such a time to cure. Some have a return of the bleeding after a few months. Three of his cases required hysterectomy. In one he had found three-fourths of a Fallopian tube; the other two he had not operated on.

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## RUPTURE OF THE UTERUS DURING PREGNANCY, WITH NOTES OF A CASE.

By ARTHUR H. N. LEWERS, M.D.

RUPTURE of the Uterus during Pregnancy stands in marked contrast to rupture of the uterus during labour, partly because it is an accident of very much rarer occurrence, but especially because its causation is little understood.

In considering the subject, it is necessary to restrict the ex-

pression "rupture of the uterus during pregnancy" to cases where the foetus has not reached a considerable size, otherwise the causes producing rupture of the uterus during labour, causes that are well understood, come into operation. The causes of rupture during labour may briefly be described as follows: some obstruction exists opposing the advance of the child; whether the obstruction is pelvic contraction, unusual size of the child, or malpresentation does not matter; the uterus continuing to contract, thickening of the upper part of the uterus occurs, while its lower segment becomes thinned. If assistance is not given, the lower segment becomes more and more thinned, and finally ruptures. It is to be noted that rupture of the uterus during labour almost always begins in the lower segment. No such explanation will help us to understand cases where rupture of the uterus occurs about the middle period of pregnancy, when the foetus is small, and when labour has not commenced, and where no mechanical violence has been used. Cases where the uterus ruptures during pregnancy, as the result of a severe blow, are not difficult to understand; clearly, the blow need only be hard enough and sufficiently well-directed, to be in itself a satisfactory explanation of the accident. It is the residuum of cases where nothing of the kind has happened, where pregnancy is not far advanced, and where nothing unusual has been noticed up to the time of the rupture, that present a difficulty.

In Trask's monograph on Rupture of the Uterus, 303 cases are recorded; of these thirty-eight only are classified as ruptures during pregnancy, the others all being cases of rupture during labour. On a careful examination of the notes in each of these thirty-eight cases, it appears that the number must be considerably reduced, first by taking away cases where the evidence that they were really cases of rupture of the uterus and not some other condition, for instance, abdominal extrauterine pregnancy, is unsatisfactory, and second, by removing those cases which were really cases of premature labour, the pregnancy having advanced nearly to term. When this reduction has been made, there remain sixteen cases where the evidence of rupture is fairly conclusive, fourteen of spontaneous rupture, and two of rupture due to mechanical violence. Trask's monograph was published in 1847, and he appears to have collected all the cases he could find recorded from about the year 1700 to the time of writing. I have only been able to meet with records of two cases of spontaneous rupture, in addition

to the fourteen in Trask's paper—one by Lustgarten, quoted in the 'British and Foreign Medico-Chirurgical Review,' and the other in the 'Glasgow Medical Journal' for 1861. To these I will provisionally add my own case, making seventeen in all. Though no doubt others have been recorded, and might have been found by a further search, still a group of seventeen cases of a very rare condition may be taken as representative, and affording material from which some general conclusions on the nature of the accident may be drawn. I propose to read notes of two of the cases, first that from the 'Glasgow Medical Journal' of 1861, and then the notes of my own case.

CASE I.—B. T., aged 37, unmarried, a farm-servant. The day before the accident, the patient had walked four miles and milked a cow, but there is nothing to suggest that she had undergone any unusual exertion. She went to bed, after a good supper, in good spirits, and apparently quite well. Soon after, about 11 P.M., she complained of pain in the stomach and bowels. When asked if she had walked too far, she answered that she had not. She vomited, and continued in pain till 7 the next morning, when she died. On post-mortem examination, the abdomen was found to contain enough blood and clots to fill a wash-hand-basin. Projecting from the pelvis there was a large tumour, covered with clotted blood. This, on further examination, was found to be the uterus. A foetus of about the fourth month, covered by its proper membranes, was seen partially protruding through a rent in the fundus of the uterus. The rent was right across the fundus, and measured transversely  $4\frac{1}{2}$  inches, and from before back  $3\frac{1}{2}$  inches. The uterus at the seat of rupture appeared normal in structure, and at no part of it was there any appearance of disease. At the os uteri and in the neck of the uterus was found a plug of clear mucus, completely closing the cervical canal. It may be mentioned that no diagnosis was made during life; and that there was, till the post-mortem examination, some suspicion that the patient had been poisoned.

The other case is that from which the specimen shown was taken, and came under my care at the London Hospital.

CASE II.—A.D., age 34, had had six children, the last about a year and ten months before admission. At the time the accident happened she believed herself to be five months pregnant. She had not menstruated for five months. Nothing had occurred during the pregnancy different from what she had experienced on other occasions. On October 12th, about 3 P.M., while going upstairs, she was suddenly seized with severe pain in the abdomen, and became rapidly blanched and collapsed. When the pain seized her she felt as if something had given way in the abdomen, and stated that she heard a crack. Vomiting occurred soon after. She was seen by some one from a neighbouring dispensary, but after a time, the friends becoming alarmed, Dr. Wheeler Brown was called in. This was about 11 P.M. He at once recognised the gravity of the case, and brought the patient up to the London Hospital. She was admitted

about one o'clock in the morning, and shortly afterwards Mr. Blaxland, the resident accoucheur sent for me. When I saw the case about a quarter past two the patient was much less collapsed than I was told she had been some time before. She was able to answer questions, and in fact supplied most of the history that has been already given. The pulse was small and compressible (120). She looked pale and anxious, and complained of pain over the abdomen. The abdomen was tender. The patient was very fat (subsequently it was found there were two inches of fat in the abdominal wall) and nothing definite was made out by palpation. She was then examined under chloroform, her own consent and that of her husband having been previously obtained to an operation if it should be thought desirable. Even under chloroform the examination was unsatisfactory. The abdomen, on palpation, had an indistinctly "doughy" feeling. On vaginal examination the uterus was made out to be much smaller than would correspond to a five months' pregnancy, and it had not the globular shape of the pregnant uterus. There was slight oozing of blood from the os uteri. According to the history there had not been more than a mere trace of blood lost from the vagina.

This being the state of the case, it will be seen that the diagnosis presented very great difficulty. First, as regards the existence of pregnancy at all, there was nothing to rely on but the patient's own statement. It is true there was a little milk in the breasts; but in a woman who had had a child only twenty months previously, and had suckled it, this, of course, was worth very little. The foetus could not be felt on palpation of the abdomen; and by vaginal examination it was certainly ascertained that the uterus did not, at the time of examination, contain an ovum of anything like five months' development. Again, considering the question of tubal foetation, according to the patient's account, she was five months pregnant, and had not menstruated during that time, nor suffered from any pain in the abdomen; whereas, had it been a case of tubal foetation, we should expect rupture to have taken place at least two months earlier, and also that there would have been a history of irregular haemorrhage and more or less pain. On the whole, the question seemed to lie between so-called spontaneous rupture of the uterus during pregnancy and an extra-uterine foetation, not, at all events, of the ordinary tubal variety, which had burst.

I came to the conclusion that the best plan would be to make an exploratory incision, as, even if the diagnosis should turn out to be wrong, the patient's risk would not thereby be much increased. On opening the peritoneum, it was found to contain a large quantity of blood and recent clot, and the hand came upon a foetus and placenta lying loose among the intestines. The foetus lay

much nearer the liver than the uterus, the placenta being midway between the foetus and the uterus. The membranes, which were twisted into the form of a band, passed downwards and to the left, and were found to lead to a tear in the left side of the fundus uteri. The rent was still bleeding a little. The foetus, placenta, and blood-clots were removed, and the tear in the uterus stitched with deep sutures of silver wire and superficial catgut sutures. A glass drainage-tube was inserted at the lower angle of the abdominal wound, and this was closed in the usual way. The patient was very cold when removed to bed. Hot bottles were applied to the feet, and enemata of brandy given. She recovered consciousness about 9.30 A.M., and complained of pain, but gradually sank, and died about 12 (noon), seven hours after the operation.

A careful examination of the uterus was made after death. The sutures used for the tear at the operation were removed. On opening the uterus it became at once evident that the foetus had never been *in utero* at all. The cavity of the body of the uterus was lined by a decidua from one quarter to three-eighths of an inch thick, in places partly detached. A glass rod passed from the cavity of the uterus through an aperture corresponding in position to the inner end of the left Fallopian tube, and appeared at the inner end of the tear in the fundus. Evidently then the ovum had developed in that part of the left Fallopian tube which passes through the wall of the uterus, that is to say, it was a case of interstitial gestation. The tear extended from the point where the left Fallopian tube entered the uterus inwards, and a little backwards across the fundus. The tear was two and a quarter inches long and two inches deep. At the inner end of the cavity formed by the tear, looked at from above, was a round hole, about three-sixteenths of an inch in diameter, which led into the cavity of the uterus. The whole uterus measured six and a quarter inches in length. The width between the Fallopian tubes is about five inches. The foetus removed was exactly eight inches long.

Now as regards the causation of rupture of the uterus during pregnancy, if we exclude cases where there is a history of a violent blow on the abdomen and cases where rupture has occurred from attempts at criminal abortion, I would suggest that the accident is due to the presence of an interstitial gestation, that is, to a fertilised ovum having lodged and developed in that part of the Fallopian tube which passes through the wall of the uterus. In

support of this view, we have, first, the fact that in all the cases where the seat of the rupture is accurately described the rupture has been at the fundus or involved the fundus. Thus, out of the seventeen cases of spontaneous rupture to which reference has been made, the rupture was at the fundus or involved the fundus in ten ; of the others, in six cases the position of the rupture is not definitely stated, and in the remaining case the uterus was two-horned. Now the fundus is just the part at which tearing of the uterus must occur when an interstitial gestation ruptures. A fertilised ovum lodging in the part of the Fallopian tube that passes through the wall of the uterus may be compared to an interstitial fibroid tumour that is growing. Such a fibroid may grow towards the peritoneum and become a sub-peritoneal fibroid, or it may grow towards the mucous surface of the uterus and form a sub-mucous fibroid, or it may remain interstitial, and as it increases in size form a projection both towards the mucous membrane of the uterus and towards the peritoneum. So it is with an ovum developing in the interstitial part of the Fallopian tube. If, from its original position, it forms a projection chiefly towards the peritoneal aspect of the uterus, then, at the time of rupture, the rupture will be most extensive on the peritoneal aspect ; that is, the tear in the peritoneal coat will be longest, that of the muscular coat of the uterus not quite so wide, and the mucous coat will only be torn a little or hardly at all. My own specimen belongs to this variety.

If, on the other hand, as the ovum grows, it forms a projection chiefly towards the cavity of the uterus, then at the time of rupture the tear will be most extensive on the mucous surface of the uterus, less extensive as regards the muscular coat, and the peritoneal coat will be torn least. A case in Trask's series illustrates this point.

Patient, aged 28, good health, first pregnancy. At sixth month, while reaching over a flour barrel, felt something give way, and had pain in the abdomen where she rested against the barrel, which continued. Ten hours after this she had labour pains ; the os partly dilated, and in four hours delivery took place. Placenta separated by the hand with difficulty, child alive. Patient died ninety-six hours after delivery.

*Post-mortem.*—Fœtid gas escaped from the abdomen. Uterus torn at the left extremity of the fundus above, and very near the

Fallopian tube; the rent of the peritoneum not over three-fourths of an inch; that of the uterine substance greater. The lining of the uterus elsewhere looked well.

If, however, as the ovum grows it forms a projection both towards the peritoneal aspect of the uterus and towards the mucous membrane (and this will be very likely to happen if rupture is delayed to a somewhat later period, such as the end of the fifth month), then at the time of rupture all the coats of the uterus will be torn to about an equal extent. When we consider that the interstitial part of the Fallopian tube is normally only about one-half inch long, and that the ovum may develop sufficiently, as in my own case, to contain a foetus eight inches long, it will, I think, be evident that this explanation of so-called spontaneous rupture of the uterus during pregnancy is a reasonable and probable one. In the specimen shown, had the decidua, as might easily have happened, been detached and expelled (it is partly detached here and there), and had the laceration towards the mucous surface of the uterus been more extensive, there would have been nothing to show that the foetus had not been *in utero*, and the case would have been set down as one of spontaneous rupture of the uterus during pregnancy.

Again, to take up another point, spontaneous rupture of the uterus in pregnancy has been considered to be due to some pathological softening at the seat of rupture. Now, such pathological softening would no doubt furnish us with a satisfactory explanation of the accident; but in the group of cases I have collected there is no satisfactory evidence that any disease of the uterine tissue existed at all. The evidence, in fact, is all the other way. Thus, in four cases, including my own, the uterine tissue is specially said to have seemed quite healthy; in seven cases, nothing at all is said about the condition of the uterine tissue; in the remaining six, one was a case of two-horned uterus; in the five others, there is mention of pathological change in the uterine tissue, but the expressions used are exceedingly vague: for instance, in one it is stated, "structure of the womb rather softened;" in another, "body of uterus rather thinner and softer than natural;" in another, "uterine tissue healthy, except about the rent, where it was evidently softened," and so on. It will, I think, be admitted that such vague expressions rather suggest that the observer has perhaps persuaded himself that some softening, or other change,

must have existed, in order to find an explanation of an accident that would otherwise have been inexplicable.

As regards diagnosis, this must always be a matter of the greatest difficulty. Out of the series of seventeen cases referred to, a diagnosis seems to have been made only in three; and in only two of these, one in Trask's series and the other my own case, was the diagnosis thought sufficiently probable to justify opening the abdomen. In the histories we read that many of the cases were thought to be due to, for example, acute peritonitis, rupture of the liver, colic or lead poisoning, and so on.

In regard to treatment, I think it is a point of much significance that the only case that recovered in all the seventeen cases, was one that was treated by gastrotomy two hours after the accident. In my own case, the operation was done eleven hours after the accident, and the patient had already lost a very large quantity of blood. The rupture was still bleeding a little at the time of the operation; had the operation been done several hours earlier, the prospect would have been very much better. On the whole, when the history, and particularly the sudden onset of symptoms, render a diagnosis of rupture of the uterus, or of rupture of an extra-uterine gestation, probable, I think an exploratory incision would be the best treatment to pursue.

*To recapitulate.*—(1) The expression "rupture of the uterus during pregnancy" should be limited to cases where the foetus has not reached a large size. Cases of premature labour should not be included, as then the causes producing rupture of the uterus during labour come in, which are of an entirely different nature; (2) Ruptures of the uterus from direct violence or from attempts at criminal abortion should be excluded, the cause of the accident here being evident; (3) The evidence that pathological softening of the uterine tissue is the cause of so-called spontaneous rupture of the uterus in pregnancy is altogether unsatisfactory. Though it is not intended to deny that morbid softening of the uterine tissue, when there is proof that it exists, would be a sufficient explanation of the rupture; (4) It is here suggested that limiting the expression rupture of the uterus during pregnancy in the manner described, this accident is always due to the presence of an interstitial gestation; (5) That cases where the diagnosis is fairly probable should be treated by exploratory incision.

Dr. BRAXTON HICKS thought that Dr. Lewers had overlooked another factor that might act as a cause in these cases, and that was concealed accidental haemorrhage. In such a case as the first that had been described, accidental haemorrhage might have distended and burst the uterine wall. The placenta was very firmly attached at its margin, more easily separable at its centre—bleeding might go on and detach the centre, and the placenta would then become cupped ; the uterus also was much tougher in its lower than in its upper part, and hence, bleeding going on, the upper would yield. The peritoneal coat of the uterus might become split from distension without actual rupture of uterine wall. He referred to a case of accidental haemorrhage which died from loss of blood. At the post-mortem, the peritoneum over the uterus was found separated quite 3 lines for more than 6 inches. The retention of the clot, and the counter-pressure of the uterine wall, might reflexly produce symptoms of collapse long before there had been sufficient haemorrhage to produce it. He had brought forward a large group of cases of concealed accidental haemorrhage with symptoms similar to those of Dr. Lewers' case. In the second case of Dr. Lewers, the diagnosis was very difficult, and an exploratory incision was justifiable and necessary. He would refer to a case in which a patient was confined prematurely ; the child was secured, the placenta was not found. The next day there was pain at defaecation, followed by collapse immediately afterwards. As the post-mortem examination there was a ragged opening in the uterus (much foetid gas escaped from the peritoneal cavity), and the placenta was found to be still in its cavity with the cord ruptured short.

Dr. JOHN PHILLIPS understood Dr. Lewers that the child was 8 inches long—but the cavity in the specimen seemed extremely small. Had Dr. Lewers satisfied himself that the child corresponded to a five months' pregnancy ?

Dr. C. H. F. ROUTH considered such a practical paper as that of Dr. Lewers extremely valuable. He referred to a case that occurred while he was connected with the Samaritan Hospital. A woman was in labour with an arm down, all the waters had escaped, and he examined with a view to turning. He found one part of the uterus, the posterior part of the os, thick ; the anterior part was thin. He passed his hand within the uterus towards the front ; a pain came on and squeezed his hand, and he heard a tear which he compared to the tearing of a drum. After the pain was over he took out his hand. There was no collapse when the tear happened. He handed over the case to Dr. Wiggin, who delivered the woman under chloroform. She died four hours afterwards of collapse. At the post-mortem, a rupture was found in the thin part of the cervix, 3 inches in length. Only 3 drachms of blood had been effused, and the peritoneum was intact. What had the tear to do with the death ? In this case there were no indications for an abdominal section. He wished to propose a practical question. In such cases as Dr. Lewers had described, were we justified in at once demanding of the patient leave to do abdominal section ? If there were symptoms of rupture before labour, he would advocate operating at once, but it was usually extremely difficult or impossible to get permission. If he might criticise Dr. Hicks's case, he would say that when the placenta was not forthcoming, a hand should at once have been passed into the uterus. He agreed with Dr. Lewers that if the operation could have been performed earlier the patient would probably have recovered.

Dr. LEWERS, in reply, thought it difficult to believe that effusion of

blood between the placenta and the uterine wall should cause a rupture of the latter. Allowance must be made for the elasticity of the peritoneum, and the shrinkage caused by the spirit. The foetus, 8 inches in length, with its placenta had actually lain in the cavity seen in the specimen. He had excluded from his paper cases of "rupture during labour." During the operation, the question arose whether he should stitch up the uterus, or should remove it by Porro's operation. As the wound was small, and quite accessible, he preferred the former course.

## HEPATICO-BRONCHIAL FISTULA.

By F. DE HAVILLAND HALL, M.D.

THE occurrence of a fistulous communication between the biliary passages and the bronchial tubes constituting the affection known as hepatico-bronchial fistula is sufficiently rare to make every case of interest; I therefore place on record the brief notes I have of a case seen some years ago. Moreover, as I do not know that any attempt has yet been made to collect the cases hitherto published, I thought it well to make a beginning, so I have incorporated in my paper notes on the cases to which I have been able to make reference.

E. P., a meat salesman, first consulted me in August, 1876, for symptoms of an anginal character. The only morbid condition to be detected was a systolic murmur at the apex. He was under my care off and on till September, 1878, and then I did not see him again for nearly three years. My next note is dated July 23rd, 1881, and is as follows:—"States that he has enjoyed excellent health since last note, no return of anginal symptoms. Been living a little too freely lately. Three weeks ago had an attack of pain in hepatic region followed by jaundice. ? Gall-stone colic. Is now slightly sallow. Urine highly coloured. Motions pale. Bowels confined. Liver not enlarged. Pulse feeble. Much depressed." He was ordered to take the following pill at night and a dose of Carlsbad water in the morning:—

R Podophylli resinæ, gr.  $\frac{1}{4}$ .  
Ext. aloes barb., gr. ij.  
Ext. hyoscyami, gr. j.; ft. pil.

and a table-spoonful of the following mixture three times a-day:—

R Acid. nitrohydrochlor. dil., 3ij.  
 Ammonii chlor., 3ij.  
 Tinct. nucis vom., 3ij.  
 Spir. chloroform, 3ij.  
 Aquam ad 3vij.; ft. mist.

July 30th.—I saw him at his own home. The patient stated that while out for a drive he was seized with a severe pain in the region of the liver. I found him rather more jaundiced. T. 99.6°. I ordered him to take an alkaline mixture.

August 5th.—Dr. Gee saw the patient in consultation with me. We learnt that the patient had had another sharp attack of pain on the 1st after a drive. From 3.30 P.M. till 10 P.M. on the 4th he vomited bright bile, since then the bile has been mixed with mucus. Enormous quantity of biliary fluid brought up in the last twenty-four hours. Liver enlarged, no tenderness. Patient is jaundiced, urine loaded with bile pigment, free from albumen. Motions said to be pale. Some râles at the bases of both lungs. Ordered milk and soda water, alkalies in an effervescent mixture, and a dose of calomel if necessary.

The discharge of biliary fluid by the mouth continued for some days; after the first day it was clearly evident that the fluid came from the lung, as it was expelled by coughing, and was frothy; at times the patient seemed as though he would be suffocated by the immense quantity of fluid brought up. The patient eventually made a perfect recovery, and I have not seen him professionally for some years. I heard from him on October 30th, 1885, that his health was very good, and that he had not suffered from liver complaint at all, an occasional pill and dose of Carlsbad salt being all that he has required.

In writing on the subject of biliary fistulæ, Troussseau\* divides them into external and internal, and among the latter he mentions cases where there were communications between the gall-bladder and the duodenum, or colon, and the pelvis of the kidney, but he does not appear to have met with an instance of hepatico-bronchial fistula. Goodeve†, in describing the symptoms produced by gall-stones, mentions fistulous openings. He says, "The duodenum is the most frequent seat of this process, but it may take place in

\* 'Clinical Medicine,' vol. iv, p. 243.

† 'Reynolds' System of Medicine,' vol. iii, p. 313.

the stomach, colon, or small intestine. It has occurred in the portal vein and in the ureters. In rare instances the stone has passed into the thorax."

Frerichs,\* in speaking of biliary fistulæ, describes external fistulæ, communication between the biliary passages and the duodenum, stomach, colon, and the urinary passages on the right side, and the portal vein, but does not give an instance of hepatico-bronchial fistula except the case described by Rouis, which I shall mention later on.

Murchison,† under the head of *Fistulæ into the Pleura (or Bronchi)*, mentions only Dr. Cayley's case, of which I shall give some particulars. In a parenthesis he says "Five cases of broncho-hepatic fistula have been described."

Wickham Legg‡ directs attention to two cases, one reported by Johannes Ranke, and the other by Rouis. "The case of Johannes Ranke occurred in a man, aged 38, in whom there existed a communication between the bronchi and an echinococcus sac in the liver. The patient brought up a quantity of bile by the mouth. The second case is that recorded by Rouis,§ referred to by Frerichs. This was an instance of communication between the bronchi and an abscess of the liver, in which 900 grammes of a biliary fluid were brought up in forty hours.

Of the following four cases, in the first there is a history of severe biliary colic, in the second the cause is obscure, in the third it is probable that a gall-stone was at the bottom of the mischief, and in the fourth a gall-stone was found post mortem.

CASE I.—I may here give with advantage a brief abstract of a case reported by Mr. W. E. Green.|| The patient was a woman 63 years old who had suffered for many years from occasional attacks of biliary colic; the last two years the attacks had been more frequent and severe. No gall-stones were found at any time. The attack commenced on May 18th, with a severe pain behind the right shoulder, opposite the sixth rib. On the 20th she brought up some bile, which was thought to have been vomited during a paroxysm of coughing. From May 21st till June 10th she suffered at times most distressingly from cough and expectoration of

\* 'Treatise on Diseases of the Liver' (New Sydenham Society), vol. ii, p. 524.

† 'Diseases of Liver,' 3rd edition.

‡ 'Bile, Jaundice, and Biliary Diseases,' pp. 61-97.

§ 'Recherches sur les Suppurations Endémiques du foie.' Paris, 1860, pp. 139 and 424.

|| 'Lancet,' July 6th, 1878.

bile. Sometimes the cough would be incessant for more than twenty-four hours, and frequently upwards of eighty ounces of pure bile would be coughed up within this time. On June 10th she vomited about a pint of most offensive matter. On the 15th it was noticed "the quantity of bile coughed up averages a pint daily." July 12th.—Expectoration of bile in considerable but decreasing quantities continues. On the 17th there is a note, "the quantity of bile decreases, and the phlegm gets thicker and more mucous in character." From this time the cough and expectoration gradually ceased, and in the second week in August she left home for change of air, and returned three weeks later quite well. Mr. Green gives in a very able manner his reasons for believing that the probable course of events in his case was as follows: Obstruction in the large duct leading from the right lobe of the liver due to the impaction of a gall-stone, accumulation of bile behind the obstruction, followed by inflammatory action and adhesion between the liver and diaphragm, then occurred perforation and escape of bile into the right pleura, and finally the bile made a passage for itself through the right lung. That the *ductus communis* was not blocked is probable from the circumstance that there was never any severe jaundice present during this or either of the previous illnesses, and that at no time was bile completely absent from the motions.

CASE II.—Reported by M. Laboulbène to the Société Médicale des Hôpitaux,\* "The patient was a man aged 46, of intemperate habits. For six months there was a constant expectoration of bile, which had commenced suddenly without preceding illness or indication of liver trouble, but after the ingestion of a large quantity of beer. There appeared to have been no vomiting, no expectoration of pus, or membrane, or clear liquid. Examination six months after the commencement of the bilious expectoration showed slight enlargement of the liver, and some dulness at the base of the right lung, where loud râles could be heard. When he coughed some bile was expectorated, and the râles disappeared. With rest, regulation of diet and bowels, &c., the expectoration lessened, and in a few weeks disappeared, and the patient left the hospital well."

CASE III was communicated to the Pathological Society by Dr. Cayley.† The following is an abstract of his report:—Dilated bile-ducts opening into left pleural cavity. Partial yellow atrophy of the liver. On post-mortem examination, the pleural cavity was found to contain more than a pint of bile mixed with pus. There was an irregular cavity situated between the upper surface of the left lobe of the liver, spleen, and the diaphragm, and shut off from the general peritoneal space by recent adhesions, but communicating with left pleural cavity. The common cystic and right and left hepatic ducts were enormously dilated. This dilatation extended throughout the ducts in the substance of the liver. No gall-stone was found. The great dilatation of the bile-ducts could hardly have been produced by anything but a gall-stone, which could only have remained impacted for a very short time, as nine days after the commencement of the symptoms bile was found in the motions. The sequence of events was first the formation of an abscess between the liver and diaphragm, and then the rupture of this into the pleural cavity followed by discharge of bile into the abscess cavity.

\* 'Lancet,' vol. ii, 1875, p. 504.

† 'Pathological Transactions,' vol. xvii, p. 161.

Though this case does not properly come under the category of hepatico-bronchial fistula, inasmuch as there was no opening into the bronchi, I thought it well to include it as the post-mortem appearances were very carefully described, and they give us the clue to the manner in which the bile makes its way from the liver to the lung.

CASE IV.—Reported by Dr. Dreschfeld.\* The patient (a labourer, aged 62) expectorated some months previous to his admission sputum of a yellow colour. On his admission the sputum was of a thick, viscid slightly frothy quality of a deep green colour, looking exactly like frothy bile. The patient was not jaundiced, and after death was found a biliary calculus, which had been formed near the upper surface of the liver, and which had led to the formation of a fistulous passage between a large bile-duct and the lungs. Dr. Dreschfeld remarked that as a result of old peritonitis the cystic duct was obliterated, in consequence of this no bile could pass into the gall-bladder. Owing to the occlusion of this viscus, there must have been stagnation of bile, and this would naturally be greatest at the upper surface of the liver, *i.e.*, furthest away from the large bile-ducts. In the course of time the stagnating and inspissated bile gave rise to the formation of the gall-stone found after death ; the calculus once formed, would act as an irritant, would set up inflammatory changes, adhesions and suppuration in the neighbourhood, and thus eventually lead to the formation of the fistulous communication.

As regards the cause of hepatico-bronchial fistula, it seems pretty clear that the rupture of an abscess or of an hydatid cyst in the liver, and the discharge of their contents into the lung either directly or by first opening into the pleural cavity and thence into the lung, is the usual course. M. Signerolles quotes M. Kamarion of Strassburg, as having collected thirty-five reports of thoracic fistula having their origin in the liver ; of these twenty-three were due to abscess of the liver and twelve to hydatid cysts. Out of the five cases to which I have directed more particular attention, viz., my own case and the cases reported by Mr. Green, M. Laboulbène, Dr. Cayley, and Dr. Dreschfeld respectively, in only one was there no evidence as to the nature of the mischief causing the fistula. I refer to M. Laboulbène's case ; after carefully considering biliary colic, hydatid cyst, and abscess of the liver as the cause of the communication between the biliary passages and the bronchial tubes, M. Laboulbène gave reasons for rejecting each of these explanations, and had no theory to offer as to the manner in which the perforation had taken place, and as he naively remarks, “ the patient got well and I am unable to furnish an anatomical

\* ‘Lancet,’ vol. ii, 1879, p. 867.

description." One other question he carefully discussed, and that was as to the source of the bile. Did it come from the gall-bladder, or from a part of the liver near the convexity close to the spot where the mucous râles were heard, at the posterior part of the right lung? He decided in favour of the latter, the view he took was that one of the bile-ducts suddenly opened into a fistulous passage from the upper surface of the liver into the bronchi. This is in accordance with the post-mortem results obtained in other cases. In Dr. Dreschfeld's case the presence of a gall-stone post mortem at once clears up the question as to the cause of the fistula; in Dr. Cayley's case, though no gall-stone was found at the autopsy the great dilatation of the bile-ducts clearly pointed to a gall-stone as the cause of the obstruction to the usual course of the bile. In Mr. Green's case as well as my own, the account given of the attack of biliary colic were too exact to throw any doubt on the diagnosis, notwithstanding that gall-stones were at no time discovered. Therefore to the hitherto received causes of hepatico-bronchial fistula, viz., the rupture of an hydatid cyst or of an abscess in liver into the thoracic cavity, must be added the impaction of a gall-stone and consequent dilatation of the bile-ducts. How the bile then finds its way into the bronchial tubes is very difficult to settle. In a certain number of cases, as in Dr. Dreschfeld's case, a biliary calculus may be formed on the upper surface of the liver, and by the irritation it produces give rise to a fistulous communication between the liver and lung. Von Schueppel,\* in speaking of this case, says "The fact that the gall-stone was the cause of the pulmonary biliary fistula makes this case unique;" but as I have already stated, Mr. Green's case, which was published before Dr. Dreschfeld's, was certainly due to the same cause.

From a prognostic point of view the condition we are considering is undoubtedly a grave one, and in all cases a guarded prognosis must be given. In the four cases of hepatico-bronchial fistula to which I have more particularly directed attention, a fatal issue occurred in one, in the other three, complete and permanent recovery followed.

An important element in the prognosis is furnished by the state of the stool; if they are pale and putty-like the obstruction to the flow of bile *per vias naturales* may be regarded as complete, and the

\* 'Ziemssen's System,' vol. ix, p. 664.

case is more grave than if there were only partial obstruction. Provided that the natural passage is or becomes pervious, the tendency is for the cholic fistula gradually to close, though it may remain indefinitely open. In my case it was a question of days only, in Mr. Green's case it lasted over two months, and in Dr. Laboulbène's case there was a bilious discharge for six or seven months.

The treatment of cases of hepatico-bronchial fistula is almost necessarily of an expectant kind. The patient must be kept quiet, on an unstimulating diet, and if there be complete obstruction to the flow of bile into the intestine it will be well to give the patient a daily dose of the pharmacopœial preparation of purified ox-bile to act as a purgative and to prevent the decomposition which takes place in the intestines in the absence of bile. Should there be any difficulty in clearing the lung of the bilious fluid, a stimulating emetic such as 10 grains of carbonate of ammonium and 20 grains of powdered ipecacuanha may be required. The question of surgical interference will arise if the pleural cavity becomes full of bile, through the closure of the opening into the bronchus in those cases in which the fluid first made its way into the pleural cavity, and thence into the bronchus, or conversely, where the bronchial tube has given way and allowed the bile to escape into the pleural cavity. The treatment to be adopted in these cases would be based on the experience derived from the treatment of empyemata, as I do not know of an instance in which it has been required.

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Dr. JOHN LOWE asked to be allowed to add one case to the list. He would refer it to the second class of Dr. Hall's group, viz., that produced by hydatids. A young man of 25, a fisherman, came to him for severe bronchitis. He had been under the care of another medical man for some time ; he was expectorating frothy mucus tinged with bile. The cause of this became clear, for he afterwards spat up a clear yellow jelly-like substance for some days which on microscopical examination showed presence of *echinococcus*. He made a good recovery, and therefore anatomical confirmation of the diagnosis was not possible.

Dr. SANSOM had seen a case but could add no details to those already given. He would like to hear Dr. Hall's explanation of Laboulbène's case. Might not the lymphatics have acted as the carriers ?

Dr. S. WEST had seen a man whose hepatic dulness was increased upwards and in whom hydatid cyst was diagnosed. He brought up by coughing an offensive hydatid membrane. He thought that hydatid was the most common cause of this condition.

## CASE OF IODIDE RASH.

By Dr. SAMUEL WEST.

FRED. WARD, aged 67, came to the Royal Free Hospital for rheumatism in March. On June 26 he was put upon quinine and iodide of potassium (gr. v three times a day). This he took till July 3rd, when a rash came out on the face, which suppurred. The medicine was discontinued, and the rash disappeared.

On July 31st the medicine was resumed, and on August 2nd the rash returned.

It began with a burning sensation in the nose and forehead. There was sneezing and running from the nose, and tingling in the eyes. Both sides of the face and forehead are covered with a bleb-like eruption.

The rash commences in a prominent tubercle, with a red base. This gradually becomes a vesicle, and finally a bleb of the size of a threepenny piece to a shilling filled with a watery purulent fluid. As this dries a scaly yellow scab was produced. In the centre of some is a dark purple stain, due to some extravasated and dried blood.

If these scabs burst they exude a brownish serum, which cakes and forms yellowish crusts.

These scabs are chiefly on forehead and upper part of cheeks and temples, and round the eyes. From one of the eyes there was much purulent discharge, from irritation of one of the scabs near it.

A few scabs are found behind the ears, and on the neck, and a few in an early stage upon the back of hands.

The appetite was good, and though the patient was poor and ill-nourished, for he had been out of work, there was no other disease except slight bronchitis.

Urine, acid, no albumen.

The face was poulticed and the scabs removed, and the places then allowed to heal up with vaseline, and in ten days' time they had all healed, without leaving any scar. Some pigment, however, marked their site for some weeks longer.

I think the case is conclusive as to the cause of the rash, for it occurred on each time when the patient was taking iodide of potassium, and disappeared as soon as that drug was stopped.

It is true, however, that the patient had for a short time while under treatment at first taken the same medicine, iodine, without suffering in this way. The rash reminded me more of some of the bromide rashes than of iodide rashes. Exactly such a case as this was shown at the Clinical Society by Dr. Carrington, in the year 1885, as the result of bromide.

Dr. ROUTH asked whether the drug was pure, and was it in each attack supplied from the same source.

Dr. HALL inquired as to the condition of the kidneys. When drugs were not well borne, he was certain that in many cases it was due to defective elimination.

Mr. J. H. MORGAN quoted the case of a man who was steward on board one of the steamers of the Queenborough and Flushing Line. He was treated for a tertiary specific eruption by iodide of potassium in 3-grain doses three times daily. He developed a profuse eruption on his face and head. He had seen another case with a similar rash, also caused by a small dose. Although, as in Dr. West's case, there was great threatening of scar formation, yet the rash died away, leaving extremely little cicatrification.

Dr. SANSOM said that small doses often produced extraordinary results. He had a case under his care some time ago, while in charge of Dr. Fenwick's wards. Syrup of iodide of iron was given in drachm doses for a very short period; the man developed rupia, and the case proved fatal. Examination of the urine showed nothing wrong with the kidneys. It had often been noticed that large doses did not give rise to poisonous symptoms.

Mr. CARTER said that no medicine varied so much in its capacity of toleration as iodide of potassium. Mr. Hutchinson some time ago gave him a valuable hint, and that was that in all cases where there was special susceptibility to its poisonous action, there was also special susceptibility to its therapeutic action, so that in these idiosyncratic cases, though the dose were reduced to homœopathic proportions, yet the medicinal effect was obtained. In one case where an adult showed great susceptibility to iodide, not by rash but by coryza, &c., he found him considerably benefitted by half-grain doses, and he had applied this principle in practice, with satisfactory results. It was desirable in these cases to recognise this power of minute doses.

Dr. WEST, in reply, said the iodide was made in the same way and from the same batch as had been given to a large number of other patients without harmful results. Impurity from the presence of *iodate* was well known, and probably not always eliminated. The urine was carefully examined, and was healthy. He thought idiosyncrasy would explain the effects of iodide in most cases. He once gave a patient a small dose of senna, which produced symptoms of acute urticaria. The same patient found that raw apples produced urticaria also, whilst cooked ones did not affect him. Iodide of potassium sometimes produced peculiar results besides a rash. A woman to whom he had given iodide developed puffiness about her eyes, which looked like renal disease ; she had no rash. The puffiness disappeared directly the iodide was stopped.

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November 15th, 1886.

## ON A CASE OF FITS RESEMBLING THOSE ARTIFICIALLY PRODUCED IN GUINEA-PIGS.

By J. HUGHLINGS JACKSON, M.D., LL.D., F.R.S.

THIS is the case of a boy who has fits when his head is touched. The case is in many respects very like that of a guinea-pig rendered "epileptic" by some operation on its spinal cord or sciatic nerve (Brown-Séquard). The patient has an epileptogenous zone, as the guinea-pig comes to have some time after the operation.\*

Before going further, I would remark that, using the term epilepsy generically, there are, I think, three classes of epileptic fits :—(1) epilepsy proper ; (2) epileptiform seizures ; (3) fits depending on discharges beginning in parts of the pons Varolii and medulla oblongata.† The fits my patient have belong, I think, to the third class. In there being persistent local disease (as evidenced particularly by the hemiplegia), the case very much resembles the cases of Brown-Séquard's guinea-pigs, and closely in that there is an epileptogenous zone. I say little of Brown-Séquard's researches on epilepsy, because Mr. Victor Horsley has recently repeated this distinguished physician's experiments, and

\* I think it very likely that every patient subject to fits of any class has an epileptogenous zone—that disturbance of the part of the periphery (ento- or epi-periphery) most especially represented in the "discharging lesion" may provoke a fit.

† I refer to a paper in 'Brain,' April, 1886, for details of this classification—"A Contribution to the Comparative Study of Convulsions."

can speak more definitely of them than I can. That the fits in the case of the guinea-pigs depend on discharges beginning in some part of the pons Varolii or medulla oblongata, or both these divisions of the nervous system, is clear, if they are producible when the parts higher have been taken away (Brown-Séquard). Convulsions are producible in rabbits by rapidly bleeding them when the higher parts are removed. These are similar to asphyxia fits, and depend, like them, on discharges beginning in the respiratory centre. I submit that laryngismus stridulus and spasmodic asthma are owing to discharges beginning in the same centres started by super-venosity.

I do not wish to make too much of one case, the only one of the kind I have seen. I particularly draw attention to the fact that the attacks are not opisthotonic, as malingering boys' fits commonly are. In this patient's case pretence is out of the question. The fits date from the tender age of two and a half years; they occur during sleep.\* When awake the fit is not producible if the boy knows he is going to be touched. There is in the hemiplegia clear evidence of local disease of some part of the nervous system. The fits have been witnessed by Sir James Paget, Dr. Bristowe, Mr. Hutchinson, Mr. Savory, Dr. Hughes Bennett, Dr. James Anderson, and Mr. Victor Horsley.

A boy, first seen in consultation with Mr. R. W. Dunn, of Surrey Street, on January 19th, 1886. The patient's age was seven on February 2nd of that year. When about three years old, the patient had a convulsion, about which I obtained no information, except that he "turned up his eyes." His mother attributed this fit to exposure to cold, by the carelessness of his nurse. After this he was "delicate;" he walked at the age of two years and three months, and did not talk till between five and six.

At the age of two and a half years he had a fit, called by his medical man "an ordinary epileptic fit;" it is said to have lasted an hour, but there may have been a succession of fits. There was foaming of the mouth and heavy breathing, and he was convulsed. He has since had four attacks of this kind, or, perhaps, we should say of this degree; the last of them was three months ago. Ever since the first "ordinary epileptic fit," he has had imperfect use of the left arm and leg (*vide infra*).

\* I have known epileptiform seizures, beginning in one thumb and affecting one arm, and turning the head to the same side, to occur during sleep.

The most noteworthy thing in this case is that he "began to fall down" occasionally about a month or six weeks before the first fit, that is, before the first so-called "ordinary epileptic fit," which occurred at the age of two and a half years. Ever since he has been subject to these "fallings," which are really fits also. But so far as his father knows the boy never has these seizures unless his head or face be touched; it is to be particularly mentioned that a fit would not occur if he knew he was going to be touched. His mother, to show me what happened, flicked his face with her handkerchief; the boy suddenly collapsed, and would have gone down to the ground had he not at the time been held by his father. He turned red, looked vacant, his respiration stopped, and his eyes were turned to one side. The affair was rapid and soon over—perhaps fifteen seconds or less—so that I did not then accurately note details. Stoppage of respiration was very evident; it had been noticed by other (non-medical) people besides his father and mother. Later, when percussing his head to see if there was a tender spot, he fell down suddenly, having the same symptoms as before. His father said that the boy would have some days fifty "falls" of this sort, and did not believe that ever a day passed without a fit, for fits, no doubt, these "falls" are. Accidentally brushing his head against a curtain would send him down. Touching any part of either side of his head or face would bring on the attacks; according to his father's account it made no difference what part of his head or face was touched. The boy could tell me nothing whatever about the attacks. I think he was unconscious in them, but cannot be certain.\* The fits would occur in sleep, as his father supposes, from the boy's head being inadvertently touched by movements of his hands. He carried about with him clear evidences of sudden inopportune falls occurring during his play. When I saw him first there was a sore on one side of his head, the left frontal eminence was much hypertrophied (his father not inaptly, for a layman, said of this swelling that from repeated falls it had become "a permanent ossification"), the right frontal eminence was not so large, and yet it was abnormally

\* In the case of the patient who had some of his fits during sleep (see a previous footnote), there was no negative affection of consciousness at the climax of those fits, which began when he was awake. He spoke when his head was much turned to the left. Until on one occasion he made at that stage of the fit a remark relevant to what I was saying, I had supposed him to be then unconscious.

large. Continuing this part of the subject, I pass on to the next visit, when I had the advantage of the help of Dr. James Anderson and Mr. Victor Horsley in investigating the case more fully.

January 25th, 1886. There is a bruise of the right cheek. His mother told him to shut his mouth before she touched his head ; she explained that he had bitten his tongue in a recent "fall." He had a habit of running with his tongue protruded ; shutting his mouth and bringing his teeth together prevented tongue-biting when he "fell." However, he had only once bitten his tongue ; he never bit it in the "severe epileptic attacks."

In the fits we saw he fell down, and seemed to be unconscious ; the two eyes turned to the right and upwards in parallelism ; his respiration stopped for a few seconds. His father had noticed that in every attack observed since the last visit the eyes turned to the right. When lying down, the fits, on touching his head, seemed to be slighter. When his head was touched whilst he was recumbent his limbs moved ; there was but one movement—a sudden jerk—which was soon over. In some the left leg moved alone, or it moved more than the other ; possibly the right arm moved more than the left.

*Permanent Condition of the Left Limbs.*—The face and tongue were moved normally, and so it is believed were the right limbs. The left arm was slightly less than the right in circumference ; his father reported that he moved it clumsily, but his grasps were about equal. His father said that when the boy was using the right hand in such an operation as drawing, the left hand was always "going," showing us in imitation movements of his own hand somewhat like those of athetosis. The boy limped slightly with the left leg ; it was decidedly less in circumference than the right. There was no foot clonus on either side, and his knee-jerks were supposed to be normal. The patient's chest was well shaped. There was no evidence of rickets.

At my request his father made particular observations on the fits in sleep. He had frequently seen attacks brought on in sleep, when the boy was accidentally touched either by himself or by others. On purposely touching him in sleep, his father observed that (letter, January 27th, 1886) "the movements of the body were exactly the same as when awake ; the duration of the apparent unconsciousness the same, and, unless my observations deceived me, the eyes were turned upwards and to the right." It

will be seen that his father, in the part of the letter quoted, does not speak confidently as to the position of the eyes in the fits during sleep. In a further letter, dated February 2nd, he writes: "I have touched him twenty or thirty times during sleep the past two nights, with the result simply of waking him. Three or four times, however, the touch has given him a momentary shock, and his eyes turned up, but I believe not to the right side. The shocks are of such short duration it is difficult to open the lid in time and watch result. If I open the eye preparatory to giving the touch, he awakes." "His aunt, who generally bathes and dresses him, maintains that he is more sensitive on the left side of the head than the right." ("Sensitive" here refers to degree of excitability, of what we may call the epileptogenous zone.) "I have often tried to discover a place on his head more sensitive than another, but have failed to do so; he may be more sensitive on the left side an inch to 2 inches above the ear, but I must not, for fear of misleading you, say that he is; his aunt thinks so, and she has opportunities of observation.

"The last four days he has stated that sometimes he feels his left arm heavy, as though a weight were pulling it down. This may be fatigue from using it. He has been very sensitive the past four days, and has had some severe falls, one on his forehead, and to-day on his chin, which is cut, bruised, and swelled."

February 6th. I saw the patient again. He bore marks of sudden "falls;" there was a cut near the right angle of the mouth; in this "fall" his teeth made a mark on the floor. There was a bruise on his forehead; this was owing to his head coming in contact with the window-sill; this "fall" was consequent on the curtain being blown by the wind against his head. He had had many attacks, and looked dull and apathetic; his father attributed the increased frequency of the attacks to dyspepsia.

The following extract from a letter written by his father (dated March 4th) is important: "At the last interview with you, one of the gentlemen present made the remark that when the boy fell he appeared to be violently drawn down by a muscular contraction. This, I think, is a true remark, for the boy says that he feels pulled down. I had rather a forcible illustration of this recently. He was sitting on my knee whilst I adjusted the band over his eye; in untying the knot, my finger slipped, the vibration caused him a shock, and his eyebrow struck me on the upper lip. Though the

fall was only a few inches—say 3 or 4—the blow was so heavy that my lip was cut, and, at first, I thought my tooth was broken; the blow of his head, by simple gravitation, could not, at the distance of 3 or 4 inches, have struck so heavy a blow. There evidently was a power imparted by muscular contraction. He tells me that he sometimes feels a weight in the left arm. After a shock this morning, he had convulsive movements for a minute in his left arm; the middle finger especially was moved."

I saw the boy again March 10th. He had cut his upper lip and bruised his nose; one of his recent falls was consequent on his head being brushed by the window curtain. I saw him once more on April 18th. His father said there was a change in the fits. Thus, in one the night before (his brother had put his arm round the patient's neck) he raised his arms above his head, and shrieked and fell; he continued to shriek during less than a minute, and was much exhausted after the fit. The boy could tell nothing about the attack. He had twenty attacks one day; they still never occur unless he be touched. The eyes turn to the right, but sometimes go straight up.

Dr. W. B. HADDEN said he had lately seen a case bearing on Professor Brown-Séquard's experiments on guinea-pigs. A man aged 34 came into St. Thomas's Hospital under the care of Mr. Croft. In 1872 he was shot in the left calf in the Ashantee War. Three or four months afterwards he had fits which continued for a year. He went to the Norwich Hospital to have the sciatic nerve stretched. For twelve years after this he had no fits. Seven weeks before admission to St. Thomas's they commenced again, and were very frequent, 4 or 5 to 8 or 10 per diem. He saw the case with Mr. Croft, and they consulted as to the advisability of operation. He saw one fit. It began with pain in the cicatrix, the sensation passed to the head, convulsive movements then began in the head, then passed to the arm and face; the pupils were inactive, the conjunctivæ insensitive, he did not pass his water, and did not bite his tongue, except once at night, for, as blood was found on the pillow and the tongue was bitten, it was assumed he had had a fit though it had not been seen. When the cicatrix was handled the man had an aura but no fit. Mr. Croft first tried to stretch the sciatic nerve by forcible flexion of the thigh on the pelvis, but severe convulsions followed, and this method was abandoned. A few days after the sciatic was cut down on and smartly stretched both ways. For eleven days after the man had no fit; then they began again at the rate of one a day, or one every other day, but since he left the hospital he has had no fits at all. The history of injury, the fact of the aura beginning in the scar, and the results of stretching, proved that there was some affection of the nerve in the leg. He thought the case was unique, and would like the opinion of the Fellows of the Society on it.

Dr. HUGHES BENNETT thought from observation of Dr. Jackson's case, that the fits were genuine. After the publishing of this case it was not improbable that others would be met with. Since he had seen this case

he had met with more than one other bearing a relation to it. He had a man some months ago under his care who had received a blow on the side of the head. This was followed by epileptic fits which were preceded by a visual aura, especially a red flash of light ; after the fit there was an attack of paroxysmal mania. The attacks lasted for six years, three of which, owing to their sequelæ, he spent in an asylum. All the fits were of the same character. This case bore on the present inquiry, because he accidentally produced a fit by pressure on the scar, which corresponded with the angular gyrus, the centre for vision. The fit thus produced had as usual a visual aura. He thought possibly the blow might have some relation to a brain lesion at this spot, and therefore he asked his colleague Mr. Pearce Gould to trephine. This was done, but nothing abnormal was found ; the dura mater was opened and the brain punctured in several directions with a probe to find any cyst or abscess that might peradventure exist in the neighbouring cerebral tissue. It is now four months since the trephining, and the man has had no fit since, though for six years previously he had not been a week without one. He considered the interesting points of the case were (1), the essentially visual aura ; (2), the portion of the cortex beneath the seat of injury was associated with sight ; (3), artificial stimulation of the scar reproduced both aura and fit ; (4), trephining has arrested the attack. He referred to another case of a woman who had a kind of sensory aura passing from the finger to the brain, not culminating in a fit. By rough percussion of the outer surface of the skull she was able occasionally to reproduce these attacks.

Dr. EWART regretted he had overlooked the announcement of the paper as he had not had time to find the notes. A year and a half ago he saw a young girl who two years previously had a series of severe convulsive fits lasting over several hours. At the end of that time she was partially paralysed. His memory did not enable him to state whether a sensory aura was observed. She got better of this first series. When brought to me she had had a second longer series of fits. She was in a condition of partial hemiplegia accompanied by contracture ; the left heel was drawn up, the gait was awkward, the left hand was carried in a helpless manner, the fingers were rigid and useless. The face for the same cause was vacant and slightly asymmetrical. There was no family history of epilepsy ; the mother was a neurotic and excitable woman. He advised the mother to let him take the child into the hospital. The fits became less and ultimately disappeared. She used at first to have about 11 or 12 in a month, but the fits in the continuance of the case were different from those in the beginning—they were momentary, without warning and of great frequency, 30 to 40 per diem, unforeseen and sudden, the child was thrown down and constantly injured. She has now many scars as evidence of this. He did not believe there was any aura. The points of interest in this case were the frequency of the fits, the presence of hemiplegia, their suddenness and force, and the influence of the sensorium on them by way of checking them. When the child's attention was engaged the fits did not occur, but when she was alone and unoccupied they were more frequent. The medical treatment in the hospital was the same as she had had as an out-patient, and therefore he could not consider that the medicine had much to do with checking the fits. He thought the explanation that the sensorium had some checking action on the fits went far to bridge over the apparent discrepancy between the explanations of Dr. Jackson and Dr. Bennett, the former of whom thought the cause resided in the subcerebral centres, while the latter thought that cortical excitation gave rise to the fits. Con-

tinuance or removal of the checking action would allow results to follow or not to follow. In his case there was a unilateral permanent defect of communication between the brain and the limb ; stimulation of the side of the cortex suddenly placed the child in the position of a guinea-pig with hemi-section of the cord.

Mr. R. W. PARKER could contribute a case of interest. In 1871 whilst he was house surgeon to Mr. Hutchinson, there was sent from the work-house to the London Hospital an epileptic with disease of the femur. When dressings were applied, or when the sinus was probed, the man had severe epileptiform seizures. Amputation was performed, and the man had only an epileptic attack afterwards, and that was at the first dressing when the "epileptogenous" area was touched. He saw the man two years afterwards in Whitechapel Road as a boot cleaner ; he had then quite lost his fits.

Dr. BEEVOR asked Dr. Jackson why he put the disease in the pons and not in the cortex. How then was there loss of consciousness and drawing of the body to one side showing affection of the muscles of the abdomen ? It was well known that in some cases peripheral irritation, such as an annular blister, would stop fits. In Dr. Jackson's case peripheral irritation brought them on. He referred to Charcot's hystero-epilepsy. An area was touched, the first stage was epileptic, then hystero-epileptic. These fits could be stopped (at least they could in France) by ovarian pressure.

Mr. CARTER remembered a case of easily excited epilepsy. The patient, a woman, came to him convinced that the epileptic fits were connected with the irritation of a chronically diseased eye. The condition of the organ demanded removal apart from the supposition. She was partially narcotised by ether, and as the eye was removed from the socket she had a most violent epileptic fit. She never had another. The choroid coat was found converted into a bony mass.

Dr. HUGHLINGS JACKSON, in reply, thought the medulla was the seat of the affection, though he was aware that Mr. Horsley considered it to reside in the cortex. But such fits were producible when the cerebral hemispheres were removed. If rabbits were rapidly bled, almost to death, and their higher centres removed, the same phenomena would follow. He was willing to confess that the case should be treated as a clinical curiosity, but perhaps after its publication others might be brought forward.

Mr. HORSLEY fully endorsed Dr. Jackson's opinion of his opinion. He was conducting his experimental work to find, as far as he could, the seat of the lesion. So far, he had found that the cortex as well as the medulla was concerned. Some twenty observers had made experiments on epilepsy, but no one of them so far had obtained from anywhere but the cortex this triple series of events, namely, firstly a latent period, followed secondly by a period of tonic, and, thirdly, a period of clonic spasm. He looked upon Mr. Hadden's case as an instance of simple nerve-stretching curing epilepsy.

## DEMONSTRATION OF PHOTOGRAPHS OF EPILEPTIC GUINEA-PIGS, WITH REMARKS.

By Mr. VICTOR HORSLEY.

Mr. HORSLEY said that the epilepsy induced by Dr. Brown-Séquard in guinea-pigs was essentially of momentary duration, lasting, as a rule, only a few seconds, just as Dr. Jackson had described as occurring in the boy. These fits were first produced by performing semi-section of the spinal cord. Later on, it was found that they could also be produced by pinching the sciatic nerve, and this method was even more effectual than the other. The fits had a definite course; immediately after pinching the skin there was a momentary interval during which the animal appeared dazed or squeaked, the strength of the squeak bearing some proportion to the fit which was to follow; then came a period of tonic spasm affecting various parts of the body according to the mode of production; finally, a period of clonic contractions. A series of instantaneous photographs were projected on to a screen, showing the different stages of fits in guinea-pigs, and Mr. Horsley called attention to the nature and succession of the contractions. He asked whether these fits were to be considered neuroses, or whether the condition was secondary to some vaso-motor change due to irritation of the vaso-motor centre? Dr. Brown-Séquard had shown, he said, that irritation of the vaso-motor centre made no difference in the occurrence of the fits, nor could any change be detected, even with a magnifying glass, in the vessels of the pia mater during a fit. Further, the time which elapsed between the touch and the fit was much too short to permit of its being dependent on vaso-motor changes. He thought it was a neurosis. It was clear that, consequent on stimulation, the right hemisphere was thrown into activity, and the left hemisphere became involved. If a slight fit were provoked in a guinea-pig, only the limb pinched was convulsed, and this pointed to one hemisphere only being involved.

*November 22nd, 1886.*

CASE OF SARCOMA OF THE STOMACH AND PAN-  
CREAS, EXTENDING FROM THE SITE OF THE  
RIGHT KIDNEY, WHICH HAD BEEN INJURED  
ELEVEN YEARS PREVIOUSLY, AND WHICH WAS  
FOUND TO BE OBLITERATED.

By Dr. JOHN LOWE.

RARE and exceptional cases are generally interesting, not merely on the score of their rarity, but because of the possibility they sometimes offer of a clue to obscure or difficult points, or to wider generalisations of existing laws.

Sir James Paget has very happily defined such cases as these when he says, that "an exception to one rule is only an example of another rule which is as yet unknown." The case I have to bring before you is in some respects, I think, unique, at least I have not been able as yet to find a parallel to it. There are, besides this, several other points of clinical and pathological moment which may prove interesting.

—, the patient, whose history is briefly as follows, was a gentleman, aged 62, of sanguine temperament, well formed, and of great muscular power, his constitution so sound that, up to the time of his accident, there is no history of illness of any kind. There is no history of malignant disease, or any other hereditary malady, in any member of his family. He was very temperate; his habits were exceedingly regular and active, his leisure time being passed in yachting and fishing. He spent many nights in his boat, during the winter months, shooting or netting wild fowl in the Norfolk estuary.

Eleven years previous to the commencement of his illness, he sustained a severe injury through a fall in his boat, whilst landing from his yacht. He fell backwards, striking his right loin across the edge of one of the seats; this caused most severe pain and great faintness, so much so that he had difficulty in getting out of the boat, and he remarked to his man, "that has given me my death-blow."

On his return home he was seen, during my absence, by a neighbouring practitioner, who sent him to bed and ordered hot fomentations to the injured loin. There was no sign of hæmaturia.

After two or three days he went about as usual, and with the exception of occasional pain in his right loin (which he felt for several years afterwards), he seemed in his usual health. The pain was now and then sharp and shooting in character, lasting only a short time, but generally it was felt as a dull aching, but not severe enough to induce him to consult me about it; so that, except an occasional remark which he made to me, to the effect that he still felt the result of the injury, I had no personal knowledge of his case until the commencement of his illness in July, 1882.

He told me that on one occasion when the pain was unusually severe, during his stay in Norwich he had consulted his old friend Mr. Cadge, who did not find anything materially wrong. So strong, however, was the patient's own feeling that some serious internal injury had resulted from the accident, that about six or seven years afterwards he made a codicil to his will, directing that his body might be examined after death, and bequeathing at the same time the sum of ten guineas to the House Surgeon of the Lynn Hospital, whoever he might be, for performing the post-mortem examination, thinking, in his usual kindly manner, that it would be of some service to a young doctor to know the condition of things which might exist. For the next five years there was little or no pain. He was always cheery and bright and active, and the accident seemed to have faded from his mind in a measure, though he would still now and again assert his belief that something curious would be found after his death.

About three months before this occurred he hurt his *left* side, through pulling at a rope on board his yacht. The pain was neither severe nor of long continuance; six weeks afterwards there was a return of the pain, and for the first time he suffered from indigestion, for which he came to consult me at the end of July, 1882.

A very careful examination failed to elicit anything abnormal in the region of the stomach, or elsewhere in the abdomen. The pain was not severe, but increased after food; there was no vomiting; there was slight loss of appetite, but nothing beyond these facts

and the pain could be discovered. The most minute scrutiny failed to detect any sign of organic mischief; the pain was not increased on pressure; there was no dulness on percussion in the region of the stomach; the circulation and temperature were normal, and the urine was perfectly healthy.

He was under my care for a fortnight, but treatment gave little relief.

At the end of this time he was transferred to the care of my *locum tenens*, Dr. Rowell, who carefully watched him during my absence abroad.

The day before I left home we most minutely examined him with special reference to the possibility of scirrhous in the stomach, but we could not detect anything abnormal. For the first fortnight in August Dr. Rowell found little change in the patient's condition, but from this time he began rapidly to lose flesh, and on the 24th, and not till then, though he had repeatedly examined him with the most minute care, Dr. Rowell detected, in the left hypochondrium, a firm round tumour, strongly pulsating and giving rise to a loud bruit.

He was disposed to think this aneurismal, and wished Mr. Cadge to see the case with him. Mr. Cadge thought that the impulse might be merely communicated from the aorta, and thought it possible that the tumour, which had become softer in the last day or two, might be an abscess.

On the 2nd September Dr. Rowell and I saw the patient together. In the short period which had elapsed since Mr. Cadge saw him he had become much emaciated; the tumour had considerably increased, and now measured three inches in diameter; pulsation and bruit were very distinct, but both disappeared on raising the tumour forwards, which owing to his greater emaciation it was possible to do. There was a sense of elasticity to the touch, but no sign of fluctuation; there was tenderness on pressure; the temperature normal, pulse 96; urine loaded with lithates, but otherwise normal; the tongue thickly coated. Patient was taking but little food on account of frequent retching, though there was no actual vomiting.

In view of these conditions the opinion I formed and expressed was that the growth was sarcoma of the stomach.

On the 5th September Mr. Cadge saw him again, with me; he was still inclined to the idea that there might possibly be abscess,

and advised steady fomentation and poulticing. There had been no rigor, nor perspiration, and the temperature was never more than 1° above the normal. From this period the tumour increased rapidly, at the same time the rapidly increasing emaciation rendered it more and more distinct; there was, however, no sign of fluctuation. The pain and retching continued, influenced in no degree by treatment but steadily increasing, relief being only obtained by hypodermic injections of morphia.

On the 8th September there was œdema of the left foot; urine still normal, as were also the pulse and temperature. On the upper and inner margin of the tumour a circular nodule could be felt. Tympanitic percussion above the tumour showed that it arose from beneath the stomach, and the area of dulness made it probable that the spleen and pancreas were involved. I find in my note-book of this date a query as to the possibility of the growth originating from the injured kidney.

On the 15th September, after a very restless night and much pain, there was a sudden rise in temperature to 103° F., pulse 130; there was increased œdema of the left foot and leg, and also swelling of the right foot. Urine still normal and without a trace of albumen. There was evidence of peritonitis, slight tenderness of the abdomen, with distinct dulness from affluxed fluid, the dull line on percussion changing with change of posture. At a consultation in the evening with Mr. Cadge, we agreed that abscess was now out of the question, and that the growth must be considered malignant. We discussed the possibility of its origin from the injured kidney, and concurred in thinking that had the injury been on the same side as the tumour it would have been a reasonable supposition, but not under the existing conditions.

From this time there was rapid failure in power, increased œdema of the lower limbs; great pain in the left leg, with redness of the surface on its inner side; continued retching, with some difficulty in swallowing, and there was increased tenderness of the abdomen.

Death ensued on the morning of the 19th September.

In accordance with the will of the deceased, a post-mortem examination was made on the evening of the same day, by Mr. Sidney Lindeman, House Surgeon of the West Norfolk and Lynn Hospital, whose report is as follows:—

"Post-mortem examination of the body of——, made September 19th, 1882, twelve hours after death.

"On removing the front abdominal wall the peritoneum was found to be covered with lymph, the omentum being much thickened and dark-coloured, the result of recent inflammation. The cavity of the peritoneum contained a large quantity (more than three pints) of serum and flocculent lymph. The stomach was seen to be displaced downwards by a large, solid, nodular mass, occupying the lesser curvature, and on the inferior margin was a chain of much enlarged lymphatic glands (varying in size from that of a bean to that of a large walnut). On lifting up the lower border of this organ, the mass was found to extend backwards and to occupy the whole of the floor of the upper part of the abdomen, lying directly upon the aorta and vena cava. The stomach at its junction with the oesophagus was found to be completely surrounded by the mass.

"On opening the stomach the mucous surface appeared natural, nor was there any apparent thickening of the stomach walls. On tracing the growth downwards it was found to extend over to the right lumbar region, occupying the site of the right kidney, but not extending beyond it. Of the kidney itself there was nothing left except a dark pultaceous body about the size of a hen's egg. The left kidney was healthy in structure, but considerably enlarged. The liver was healthy. The substance of the pancreas was so merged in the growth that it was impossible to separate the two.

"The spleen was healthy, although its surface was covered with the thickened peritoneum.

"On subsequent microscopic examination of the tumour it was found to consist of large round-celled sarcoma.

"On more detailed examination of the tumour it was found to consist of dense fibrous nodules, with here and there large cerebri-form masses. It was not deemed necessary to examine any part of the body except the abdomen."

*Remarks.*—There are strong reasons for believing that the sarcomatous growth had its origin in the kidney, and that it extended from that point through the lymphatics to the pancreas and stomach. We may note first that the growth crossed the spinal column in a narrow band from the site of the kidney, and that at no other point was the right side of the abdomen invaded. There

is no satisfactory mode of explaining why it should have followed this course had the disease begun in the stomach.

A point more difficult to understand is why the sarcoma originating in the kidney should not have developed there as in ordinary cases of kidney sarcoma, but should have passed away from it to other parts. I shall endeavour presently to give a partial explanation of this fact, but it is a very interesting point upon which I trust some of those present may be able to throw light.

I think we may fairly assume that there occurred, at the time of the accident, extensive crushing of the substance of the kidney and laceration of its capsule into the hilum; that there was at the same time injury of the renal vessels leading to their obliteration, and that there was also, most likely, plugging of the right ureter.

Without the existence of all these conditions it is difficult to comprehend what followed.

There could have been no great amount of primary haemorrhage or there would have been pain of greater severity and longer continuance. That the crushing of kidney substance was severe is shown by its complete disappearance. The result of a low form of inflammatory mischief, and the withdrawal of blood supply by obliteration of the renal vessels. This latter condition was found in several cases described by Mr. Poland,\* and in one by Mr. Pollock,† in whose patient the ureter was found to be plugged.

Mr. Holmes‡ had a similar case, in which a groom was kicked by a horse. He had considerable haematuria at the time. There was found after death much induration of the kidney, and the remains of a decolorised blood-clot.

In this case there was no plugging of the ureter, that is, from the commencement, for I take it there must be plugging at a later stage in most of the cases in which the kidney is destroyed by laceration as the clot in the hilum solidifies, else there would be a continuance of haematuria. But there is a class of cases in which there is no haematuria, or, if it exist, so slight in character as to escape notice; in such cases it is apparent there must be immediate coagulation of the effused blood and plugging of the ureter.

In four cases of sarcoma of the kidney, including the present one, which have come under my care, there was no history of

\* 'Guy's Hospital Reports,' 1844, p. 470.

† 'Holmes' System of Surgery.'

‡ 'Medical Times and Gazette,' vol. i, 1860, p. 76.

hæmaturia, although they all resulted from injury, and in all there was, I imagine, plugging of the ureter.

Extra-peritoneal hæmorrhage may be limited, as Mr. Lawson Tait\* has shown by the resistance of the cellular tissue surrounding the kidney; but if there were no injury to the larger vessels and the supply of blood was uninterrupted we should have an extensive clot either in the hilum or external to the kidney; there might result a hydronephrosis, or "peri-renal cyst," of which Mr. Wheelhouse† describes several cases arising from severe and prolonged crushing of the kidney; or, again, there may result from subsequent inflammatory or other change, pyonephrosis or sarcoma.

In Mr. Pollock's case there was complete destruction of the kidney arising from a fall in the hunting field. Death was caused by pyonephrosis two years after the accident.

Sir Joseph Fawcett gives a case which is a graphic illustration of what probably occurred in the kidney of my patient.

A man who had sustained very severe internal injuries and fracture of both arms through falling from a tree, died of tetanus, after amputation of the forearm, sixteen days subsequent to the accident. The post-mortem examination disclosed, in addition to rupture of the liver and spleen, the following condition of the left kidney:—"At its upper end is a very extensive rupture running up into the hilum. The areolar tissue surrounding the vessels at the entrance into the hilum was dense from infiltration of blood. Nearly three-fourths of the kidney, including its upper end, nearly all its posterior surface, and a great part of its anterior, is of a pale buff colour, and soft and doughy to the touch. The posterior so affected is separated from the sound part by a dark-coloured wavy line of demarcation, which can be seen extending through the deep as well as superficial structures. Some coagulated blood over the kidney and left side of the pelvis."‡

Two points of much interest in the present case are, I think, the slight amount of constitutional disturbance which an accident of such gravity produced, and the long period of comparative quiescence which followed.

Dr. Andrews§ narrates an instance of a large sarcomatous growth affecting the right kidney, which lasted fourteen years:

\* 'Lancet,' vol. ii, 1886, p. 805.

† 'British Medical Journal,' vol. ii, 1885, p. 1151.

‡ 'Medical Times and Gazette,' vol. i, 1867, p. 523.

§ 'Lancet,' vol. ii, 1877, p. 395.

"The tumour seemed to have originated in the medulla of the kidney and to have grown directly out of it. Near the root of the dense tissue and in its substance was a rounded mass of cheesy and calcareous matter." (This in all probability was the remains of the altered blood-clot.) "The origin of the disease was clearly traceable to an injury of the kidney followed by hæmorrhage from the bladder."

We may reasonably suppose, in the case under consideration, that after the accident there was absorption of the effused fluids and of a portion of the blood-clot; that during this time there was no secretion of the urine, in consequence of the secreting structure being destroyed and the arterial supply being cut off; that after a while the remnant of clot underwent degeneration, and the cancerous growth being unconfined, passed by proliferation through the ruptured hilum across the spinal column, invaded the lymphatics and veins, and so passed on to the left side, reaching the pancreas and surrounding the stomach.

With regard to the question of diagnosis, it will be evident that this was not easy at the time when the tumour was first detected and the abdominal wall was thick and somewhat tense, but when emaciation had begun to make rapid progress the difficulty diminished. In the early stage the existence of aneurism of the splenic or some other artery was not an unreasonable supposition. There was well-marked pulsation, and loud systolic bruit. When the wall of the abdomen had become thinned it was easy by lifting the tumour forwards to prove that aneurism did not exist.

The swelling might have been due to abscess, but there was in the early stage great difficulty in deciding whether fluctuation was present or not, the tumour being small and elastic and giving a sense of resilience. This view was also favoured by the rapid growth of the tumour. At the time when I saw the case again the tumour had become much more prominent; there was great elasticity and a certain degree of mobility, but no feeling of fluctuation; there had been no rise in temperature; no rigors nor perspirations.

These facts induced me to think that abscess could not well be present. Then having in view the rapid growth of the tumour and its large area of deep-seated dulness, its comparative mobility, and a sense of firmness in the tumour itself, it seemed to me that it could only arise from a rapidly growing sarcoma.

Mr. PURCELL read notes of the case of a woman of 62 who was admitted into the Cancer Hospital with signs of abdominal tumour. She died of syncope from internal haemorrhage. At the post-mortem the pylorus was found drawn to the left side and fixed by adhesion to the abdominal parietes. It was the seat of a malignant growth which had completely ulcerated through the anterior wall of the stomach opposite to the adhesion. A piece of intestine was also found adherent opposite to this part of the stomach. The gall-bladder contained a number of calculi, one of which was impacted at its outlet. The case was unusual in that nature had attempted for herself both gastrostomy and gastroenterostomy. If the latter had been accomplished it would have carried out the operation as suggested and performed by Wölfler, and which has been done six times—two survived the operation. Mr. Reeves, Mr. A. Barker, Mr. T. Morse, and Mr. Pearce Gould, had each done a gastroenterostomy. Drawings of the stomach and liver were shown. A second case was that of a woman of 60, who came to the Cancer Hospital with a history of abdominal tumour of a year's duration. At the autopsy the pylorus was found contracted, and the seat of a cauliflower-like growth which had extended so as to form an adhesion to the liver.

Mr. CARTER thought a remarkable point in Dr. Lowe's case was the long delay between the injury and the apparent commencement of the malignant growth. It reminded him of a case of tumour of the orbit which occurred in a girl 10 years of age. Under the upper and outer orbital margin was a small hard nodule, there was no proptosis, and he advised that it should be let alone. During the next year or two it grew rapidly. He made an incision over it and found that it was a projecting process of the lachrymal gland, the whole of which was indurated. He dissected it out, the patient recovered rapidly, and nothing was seen for five years, when the prominence again showed itself. At a second operation the tumour removed was composed of colloid tissue, and showed no evidences of malignancy. In two or three years more the growth again recurred, there was proptosis, the globe was excised, the orbit almost emptied, and the cavity stuffed with zinc chloride on lint. The growth was a spindle-celled sarcoma. There was intracranial recurrence in a few months, and the patient died of a secondary cerebral spindle-celled growth. She was 20 years old at her death, the growth had therefore extended over a period of ten years; she had had three operations, and it was more than six years from the first before the characters of sarcoma were present.

Mr. B. JESSETT spoke of the difficulty in diagnosing abdominal tumours. In one class of cases there were symptoms of malignant disease but no tumour to be felt; in a second there was difficulty in telling between tumour and abscess; and in a third where signs of tumour existed, whether that tumour was connected with the stomach. Dr. Lowe had not found haematuria, this was extraordinary if rupture of the kidney had occurred at the time of the accident, but he had quoted cases showing this might happen. It was uncommon to find sarcoma of the stomach as a primary disease, and it was still rarer as a secondary affection. Sarcomata always, or nearly always, travelled by the blood-vessels, and not by the lymphatics. How could this growth travel from the kidney on the right to the stomach on the left? He thought that the disease commenced in the stomach and travelled thence by way of the pancreas to the kidney, which, being injured, would probably be readier to take a malignant action. After serious bruising of the kidney it was certainly very uncommon to find no resulting haematuria or pyonephrosis.

Dr. S. WEST quoted a case in which cancer of the gall-bladder existed. It was latent and not suspected during life, the patient died of mediastinal tumour, which was also unsuspected. At the necropsy there was found old-standing cancer of the gall-bladder, which had spread to the mediastinum where the growth was more recent, and thence by way of the root of the diaphragm to the abdominal lymphatic tissues.

## CASE OF SUBACUTE ATROPHY OF THE LIVER.

By Dr. SAMUEL WEST.

FRANCES D., aged 28, was well till five months ago, when she became troubled with morning sickness. This was attributed, though wrongly, to pregnancy. One month ago she became jaundiced, during the last fourteen days she has been delirious, chiefly at night, and had become very feeble; the jaundice had not, it was stated, altered much since the commencement of her illness, and had never suffered from it before.

She had been married seven years, and had been five times pregnant. Her eldest child was living and well. One died at three months, and three others were stillborn.

There was no other history or evidence of syphilis, and she was stated to be a very steady and temperate woman, and although she was a barmaid, she had not been addicted to drink.

December 4th.—On admission the patient was thin and deeply jaundiced, the skin dry and harsh, the face freckled. Thoracic organs healthy. Respiration 32. Pulse 132, small and feeble. Slight œdema of the feet and legs, and a small superficial ulcer on the dorsum of each foot, as if from chafing. Urine 1020, dark reddish-brown in colour, intensely acid, and containing much bile pigment, and one-fifth of albumen. The bowels loose, open three times in the last twenty-four hours, pale but not clayey. No trace of bile acids could be obtained in the urine, nor on evaporation any traces of leucin or tyrosin. The abdomen was not distended, but there was slight fulness over the hepatic region, where there was great tenderness on pressure. The hepatic dulness extended from the fifth interspace in the right, as far as 2 inches below the margin of the ribs stipple line. There was much wandering delirium during the night: morning temperature,  $102^{\circ}$ ; evening,  $101^{\circ}$ .

December 5th.—Morning temperature, 100°; evening, 101°; motions, 1.

December 6th.—Morning temperature, 102·4°; evening, 100°; motions, 1. Patient complained of very great muscular weakness.

December 7th.—Less delirium but greater drowsiness. No vomiting. Morning temperature, 100°; evening, 102·2°; pulse, 144, very weak; motions, 1.

December 8th.—Morning temperature, 101·4°; evening, 100°; Pulse, 130, intermittent; motions, 2; still wandering. Liver dulness the same, but tenderness a little less. This, however, varies much from day to day. Jaundice not altered. Tongue coated with yellowish-white viscid fur.

December 10th.—Looks more ill, hepatic dulness and tenderness to-day are somewhat increased. Urine, one-sixth albumen, scanty. Morning temperature, 101°; evening, 99°; pulse, 132; motions, 1.

December 11th.—Wandering more, intervals of consciousness fewer and shorter. More œdema of feet. Morning temperature, 99°; evening, 99·8°; pulse, 140.

December 12th.—Morning temperature, 99°; evening, 100·4°; pulse, 140. From this time to her death the temperatures oscillated daily between 99° and 100·4°, except on three days (the 15th, 16th, and 17th), when its maximum was one degree higher, viz., 101·4°.

December 17th.—The patient was much weaker, and the hepatic tenderness greater. She vomited twice. Jaundice the same, but urine less deeply coloured. A large distended vein noticed running from umbilicus upwards towards thorax.

Until this time patient had had vapour baths, with the object of relieving the kidneys, the urine being albuminous and small in quantity (averaging only about 20 ounces), but the baths were now abandoned, as they appeared to increase the weakness.

December 19th.—Patient complained of great tenderness all over body.

December 20th.—Restless and wandering all night. Pulse 180, running weak, intermittent. Respiration, 40. No vomiting. Bowels not open for two days. Patient much worse. Tongue and lips dry, and covered with sordes. Jaundice much the same, but patient looked more cachectic, and had rapidly lost flesh during

her stay in hospital. The general hyperesthesia was more marked. The enlargement of the liver was no longer to be made out, and the hepatic tenderness had almost disappeared, so that the liver had probably become much smaller. The feet and legs were now slightly oedematous. The urine still scanty, containing one-sixth albumen, the deposit with nitric acid taking up the pigment and becoming emerald-green. The blood was examined, and found but little altered, the discs formed rouleaux well, and were of normal shape; there seemed to be a slight increase in the number of white blood cells, and granular masses were abundant.

December 21st.—Patient much worse, complained of thirst, and was very delirious. Pulse, 200, hardly to be counted. Respiration very rapid. Tongue dry and black. Temperature only 100°.

On the 22nd the patient grew rapidly worse, and died quietly of exhaustion on the 23rd.

*Post-mortem Examination.*—Body emaciated and jaundiced. On opening abdomen less of the liver was visible than normal below ribs. A few ounces of clear serous fluid in the pericardium. Muscular tissue of heart pale, but otherwise normal. The upper lobes of both lungs in great part consolidated from caseous pneumonia of recent date, with a few small cavities, the pleura over those portions being adherent. Kidneys congested, distinctly fatty. Spleen loose and congested. Stomach and intestines congested throughout, with numerous small ecchymoses in mucous membrane. Liver, 53 ounces, surface smooth, capsule transparent, not adherent. Section yellow, but lobules still distinct. Central vein congested, consistence fairly normal. No enlargement of glands in the hilus, nor was any mass discovered pressing on common bile-duct.

*Microscopical Examination* showed much greater changes than the negative naked eye appearance suggested. The sections were stained with hæmatoxylin, and with picocarmine and hæmatoxylin.

The first thing that struck the eye was the irregularity of staining, parts being well stained, and others refusing to take the stain at all. In the stained parts the liver structure was unaltered. In the others extreme changes were found.

Scattered in small irregular patches throughout the section were seen small nodules of small cells of connective tissue growth, lying between the lobules, and sending projections of similar

growth into the outer part of them. In many of the nodules the nuclei were well stained, and the patch looked like the lymphatic nodules in lymphadenoma.

In other places this connective tissue had undergone further changes. The cells had to a great extent disappeared, and those that remained stained badly; the matrix had greatly increased, and formed a thick meshwork extending far into the lobules. It was granular, yellowish in colour, and unstained.

In such parts the liver cells had almost completely disappeared. In others they were visible, lying in the thickened meshwork, much atrophied, very granular, yellowish in colour, the nuclei shrunken and taking but little stain. All of them, however, had not undergone this granular atrophy. Others had undergone a kind of vacuolation, and formed cyst-like bodies two or three times the size of normal liver cells, filled with a clear substance, the cells apparently becoming first greatly swollen and granular, and then this mucus-like change developed in them, when the nuclei disappeared in most cases. In others the nucleus remained flattened at one side as in a fat cell. Some of these degenerate cells seemed to run together to form the larger cystic bodies, filling some of the larger connective tissue meshes.

In other places the liver cells were fatty, but this was generally where the liver cells were otherwise normal, and those fatty cells differed in appearance and size, entering from those already described, which had undergone mucoid (?) degeneration.

The pathological process seemed to consist in a small celled interstitial growth, which quickly degenerated. The cells in the neighbourhood being involved in the degeneration, and either undergoing granular atrophy or cystic degeneration.

Of what nature these changes are it is difficult to say. Tubercular they are certainly not. They do not resemble any form of cirrhosis, nor are they like any lymphatic growth, such as lymphadenoma. On the other hand they are strongly suggestive of gummatous, and I think syphilis is the simplest interpretation, the cellular degeneration being a secondary result of the interstitial change.

Clinically the case presented many of the features of acute yellow atrophy, viz., the jaundice or delirium, with the hepatic tenderness, and the decrease in size of the liver observed during life. Against this diagnosis was the length of the illness, viz.,

seven weeks dating from the commencement of jaundice. The patient's occupation suggested cirrhosis, but of this there was no special evidence. The case was on the whole regarded as one of sub-acute yellow atrophy of the liver, probably connected with some syphilitic process of the nature of chronic interstitial hepatitis, for the history of still-born children suggested the probability of syphilis as a factor in the pathology of the case.

The apparent absence of naked eye evidence of atrophy of the liver was disappointing, and it was only on microscopical evidence that the widespread changes could be detected. Of the acute and progressive degeneration of liver cells there could be no doubt, so that although the naked eye appearance was not that of ordinary acute yellow atrophy, that diagnosis was fully justified, and on the whole the probability of syphilis being the cause of the primary interstitial change is great.

The case is a remarkable one so far as the hepatic changes are concerned, and was during life one of very great clinical difficulty.

## VILLOUS TUMOUR OF RECTUM.

By H. W. ALLINGHAM, F.R.C.S.

I WISH to show you to-night a villous tumour of the rectum, which, from the rarity of these growths, seems to be worth reporting.

The patient from whom I removed the growth a few days ago, is a Mr. B., aged 73, who has always had good health.

About three years ago, on going to stool, he noticed that he had a discharge of glairy mucus from the rectum, a tumour occasionally came down, and his motions were sometimes streaked with blood; this he attributed to a small pile. A few months after the commencement of his illness, he became pale and complained of giddiness, feebleness, and a sensation of numbness down the legs, this continued for some time, and in February last, feeling very ill, he consulted a surgeon, who told him he had very bad piles, and thought, at his age, it was not advisable to operate on them. At this time he was constantly going to stool, and losing great quantities of mucus, which ran from him involuntarily. His bowels

never acted without a purgative, and he had a bearing down pain and a sense of fulness in the rectum.

In August last he lost blood in some quantities, and has done so at intervals ever since—the mucous discharge being very profuse.

When seen fourteen days ago, he was pale, weary, and very feeble; complaining of deafness, giddiness, and restlessness at night.

On introducing the finger into the rectum, mucus was freely discharged, and about 3 to 4 inches up the bowel a large soft moveable tumour could be felt occupying the whole bowel, being attached to the posterior and right lateral walls, and evidently dragging the wall of the bowel down by its weight. There was no well-marked pedicle to be felt, the tumour growing directly from the wall of the rectum, and extending over an area of some inches.

On November 17th I operated, Mr. Shadwell, of Acton, who kindly sent the patient to me, being present. The sphincters were forcibly dilated, and then, with the first finger of the left hand and a vulsellum, after some difficulty, I succeeded in bringing the tumour, which was about the size of a foetal skull, outside the anus. Then it was seen that the tumour had no real pedicle—that part being represented by the wall of the bowel which was pulled down. The base was 4 inches in width, and 1 in thickness. Taking care that there was no gut in the folded bowel, I ligatured the base by passing a needle with a double thread through and through the base, and tying it in segments; the growth was then cut away, and the stump, which was quite soft and healthy, returned. As soon as the growth was removed, it shrank at once to one-third its original size. The patient is going on favourably, the ligatures having not yet separated.

Dr. Delapine has very kindly examined a portion of the growth for me, and made an excellent diagram which I think will thoroughly explain the microscopical aspect of the growth, and shows that the tumour is of an innocent nature.

In looking through the literature of the subject, I find that only the following number of cases have been reported: Mr. Allingham, 9; Mr. Gowland, 3; Mr. Goodsall, Mr. Quain, Mr. Symes, 2 each; Mr. Cooper, Mr. Cripps, Mr. Gorsalin, Mr. Van Buren, Mr. Bryan, each 1; making 23 in all.

The characteristics of these growths are—the large quantity of

mucus discharged, resembling the white of an unboiled egg; their soft velvety feel, and a want of solidity and firmness which is felt in large polypi.

Although some of these tumours are reported to have had a pedicle, the majority have only a broad thick base, and by their weight pulling the bowel down give rise to the appearance of a pedicle.

In most cases these tumours grew some inches up the bowel from the posterior wall. When they spring from the anterior wall, before ligaturing the base, care should be taken lest a piece of small intestine has slipped between the folded gut.

All the patients, except three, whose cases have been reported, were above 50 years of age—many of them being quite old people.

Clinically there is no doubt the majority are quite innocent growths, but a few have been followed by malignant disease.

After what has been said, it is obvious that these villous tumours differ from polypi from the fact that the latter occur chiefly in the young, never attain such a large size, and are nearly always well pedunculated; and, moreover, if the polypus is of the soft variety it has a smooth and even surface, if of the hard kind its surface is nodular.

I regret to say the patient died of bronchitis on November 27th. The bowel was nearly well, the ligature had come away.

The bowels had acted well and frequently, there being no signs of blood or mucous discharge.

Mr. BLACK saw such a tumour removed years ago at the Rectal Hospital. In that case there had been a good deal of melæna, whereas in the present one the motions were only streaked with blood. He had since then seen one small one removed.

Mr. PYE asked how the ligatures were applied round the growth at that height up the rectum. Was it possible to bring the tumour down so as to apply the ligatures with comfort, or had the work to be done in the dark? Mr. Allingham had said the base was 1 inch thick. Did he mean that the wall of the anterior part of the rectum was 1 inch thick, and, if so, was that wall removed; or is it still included in the ligature, and waiting to slough away?

Mr. BENTON referred to a case of villous growth in the rectum of a woman, *aet.* 50, who came to him, said to be suffering with haemorrhoids. He found on examination a growth the size of a small foetal head. He passed ligatures through its base, and removed it all. He had since examined her, her health was much improved, and her nervous system more at ease. Her chief symptom had been a mucous discharge like

white of egg. These tumours were usually broken up during the operation for their removal.

Mr. MORGAN referred to the great amount of shrinking which the growth had evidently undergone, which might be explained by the free discharge of mucus from Lieberkühn's follicles. The patient showed evidence of the existence of this tumour by loss of mucus, and not loss of blood as usual in rectal tumours.

Mr. CARTER said that, owing to the free supply of blood-vessels and dilated veins to this part, he thought it hazardous to use the ligature only. He would use also the cautery and écraseur.

Dr. ROUTH saw a woman at the Samaritan Hospital who complained of passing mucus and blood per rectum. He examined, and found a tumour like a pinaferous cone, only that it was smooth. The patient would not come into the hospital, and he had not again seen her.

Mr. ALLINGHAM, in reply, said there had been no haemorrhage at or since operation. The growth was easily drawn down outside the anus by vulsellum forceps, needles were passed through and through, and it was tied in segments. The tumour by drawing on the mucous membrane had made it lax, and separated it from the muscular coat; the ligatures therefore only involved the mucous and submucous tissues. Haemorrhage when present was usually due to ulceration. The chief symptom was excessive mucous discharge.

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*November 29th, 1886.*

## CASE OF ATHETOSIS IN A YOUNG MAN AGED TWENTY.

By Dr. BEEVOR.

THE patient, a young man, aged 20, is at present under the care of Dr. Hughlings Jackson at the National Hospital for the Paralysed and Epileptic, and I have to thank him for allowing me to show the case.

From the notes taken by Dr. Wilson, the house physician, it appears that thirteen years ago while in St. Mary's Hospital under the care of Sir E. Sieveking, he had a convulsive fit, and afterwards he was paralysed in the right side; he gradually regained power, but has suffered from epileptic fits ever since, at long intervals.

The movements began in the right hand last year; up to July of last year the right arm was rigidly adducted to the trunk, the elbow being extremely flexed, the wrist flexed to a right angle and pointed, while the fingers were straight. He had a splint applied

to the arm and had it rubbed, and he states that these movements then came on, and at the same time he began to acquire some voluntary power over the arm.

The right hip-joint was dislocated from the effects of a fit thirteen years ago, and the right leg is now  $3\frac{1}{2}$  inches shorter than the left.

He lost speech entirely with the first attack, and ever since his articulation has been very defective.

At the present time he has slight paralysis of the right side of his face. The right hand, which is affected with athetosis, is continually moving in all directions, the fingers are flexed and extended and contorted into all manner of shapes. He is able, however, to perform most of the simple movements with the right hand, but the voluntary efforts are much impeded by the involuntary spasms, and it takes him some time to overcome them. All the finer movements are lost, so that he cannot button his coat or pick up a penny, the fingers becoming rigid and preventing him from carrying out such voluntary movements. The right leg he has complete voluntary control of, and the right foot is only very slightly affected with involuntary movements. There is no anæsthesia. No mental defect. His speech is very indistinct and thick, but there is no paralysis of the soft palate. No aphasia.

The diagnosis of the disease would probably be a thrombosis, occurring in the motor part of the left cortex, but from the history of the case and the absence of knowledge as to the character of the initial fits it would be impossible to state in what exact part of the motor area the fits first began.

## TWO CASES OF LATERAL DISPLACEMENT OF THE PATELLA

By HERBERT WILLIAM ALLINGHAM, F.R.C.S.

I BRING three cases before the Fellows of the Society to-night to invite discussion on their apparently rare condition, for on looking through the literature on this subject I find only a few reported cases of this deformity.

CASE I.—John C., aged 6. His mother gives the following history, viz.: when a few months old he is said to have fallen down, and soon after the

supposed injury to his knee she noticed that the left kneecap was displaced into the outside of the knee-joint.

*Present Condition.*—If the leg is flexed on the thigh, the patella slips into the outside of the external condyle, but on extending the leg the patella returns to its normal position. There is some wasting of the quadriceps extensor cruris, especially the inner part of that muscle, and when the quadriceps is put in action the rectus femoris and vastus externus is firm and contracted, but the vastus internus remains flabby and inactive. To faradisation the action of the muscle on the inside of the leg, *viz.*, the vastus internus, is completely absent, whereas when the current is applied to the rectus and vastus externus this muscle contracts. There is no alteration in the shape of the bones entering into the formation of the knee-joint.

**CASE II.**—Walter D., aged 24, brewer, says that his left patella has rested on the outside of the knee-joint all his life, or if not born so the malposition took place when he was quite young.

On examination the left patella occupies a position on the outside of the left external condyle of the femur, and remains so; not altering when the leg is flexed or extended. The quadriceps muscle is wasted, and on putting the muscle into action it can be seen that the vastus externus is quite soft and non-contractile.

Several suggestions have been put forward with regard to the cause of this interesting deformity, *viz.*, that it is either due to a lax state of the structures on the inner side of the joint which help to bind and keep the patella on the front of the femur, or it is caused by knock-knee; but this latter condition does not exist in the slightest degree in my two cases.

I am inclined to think this displacement is brought about by paralysis affecting the vastus internus, and consequently the contraction of the rectus and vastus externus pulls the patella to the outer aspect of the knee-joint. For as may be seen in these cases there is no response to the electric current on the part of the vastus internus, and that that muscle is soft, flabby, and paralysed.

Mr. J. H. MORGAN said that these cases were in all points identical with one he showed before the Society last year. He then mentioned the two theories of their causation. The view he maintained then was confirmed by what he saw in these two cases—that the condition was due to an unnatural laxity of the internal lateral ligament. This he thought preferable to the further fetched theory of muscular paralysis.

Mr. NOBLE SMITH had seen two cases; one in a child and one in a man. Both were probably congenital, and in both cases there was a want of attachment between the patella and the capsular ligament internally; also in both there was some tendency to knock-knee. The man got about fairly well with a support.

Mr. BOWREMAN JESSETT had a case under his care not long ago. Both these cases were dislocation outwards. Did it ever occur inwards?

Mr. W. H. BENNETT two years ago saw an instance of this malformation

in a girl 7 years of age. She was suddenly seized with loss of power in the right lower limb. Two years afterwards when he saw her she was limping, which the parents noticed at the end of the attack. The child had had infantile paralysis and recovered up to a certain point; the deformity had existed from the time she had ceased to improve in her condition. There had previously been nothing the matter with the leg. On examination there was loss of power in the *vastus internus* and wasting of the whole limb, which was colder than its fellow. He thought that the cases shown were also the result of previous infantile paralysis in which recovery had taken place up to a certain point, leaving the internal *vasti* permanently weakened.

Mr. EDMUND OWEN thought the condition might be brought about by one of three causes; either a congenital malformation, or infantile paralysis, or *gena vulgam*. In the latter owing to the obliquity of the joint the deformity followed as the resultant of the action of two forces. The steepness of the internal facet on the general condyle prevented dislocation inwards, whereas the gradual slope of the outer facet favoured it.

Mr. CARTER inquired what was the electrical reaction of the muscles?

Mr. ALLINGHAM in reply said that with the interrupted current on the affected side the *vastus internus* acted very feebly if at all. On the opposite side it yielded a normal reaction. In the man there was no knock-knee whatever, whereas in the child the mother noticed it when it was three weeks old.

## A CASE OF PES GIGAS (CONGENITAL HYPERSTROPHY OF THE FOOT).

By HERBERT WILLIAM ALLINGHAM, F.R.C.S.

ANN F., aged 21, was born with a hypertrophied foot which has continued to enlarge and now presents the following peculiarities:—The anterior half of the left foot is enormously enlarged; the skin and cellular tissue on the dorsal and plantar surfaces are hypertrophied and thickened, the great and second toes are enlarged and thickened and ankylosed at the metatarso-phalangeal joints in an extended position, being at right angles to the foot. The second toe measures 6 inches in length and 3 in circumference, at the same time being united to the third toe. The remaining toes, *viz.*, the fourth and fifth, are normal.

Mr. DAVIES-COLLEY brought forward a similar case at the Pathological Society. The deformity affected the great and second toes. There was great enlargement of the connective tissue of the sole of the foot and the instep, and a similar condition of the subcutaneous tissue up the leg. There was no enlargement of the bones. Amputation of the foot was followed by a satisfactory result, and he suggested the same treatment here.

Mr. W. H. BENNETT had seen two cases; one in a girl of 6, the other

in a boy of 15. The whole anterior part of the foot was enlarged and the toes also. It extended back to the ankle-joint. The parents were indisposed to permit amputation. It was painful, and the little toe stuck out at right-angles. He proposed Syme's amputation, but it was not permitted, so he trimmed the foot down to the size of the opposite one, and the case did well, and proved that it was not always necessary to remove the whole of the disease. Since the operation the part which was left had not grown proportionately larger than the rest of the foot. The material removed consisted in part of flabby semi-gelatinous-looking substance like that obtained from a ganglion, and in part of hypertrophical cellular tissue with increase of lymphatic cells.

## CASES OF KNEE-JOINT ABSCESS TREATED BY ERASION.

By EDMUND OWEN, M.B., F.R.C.S.

Mr. EDMUND OWEN showed two cases of erosion of the knee-joint for advanced articular disease. He remarked that the cases promised well, but that they had not yet been submitted to the time-test. He compared the operation of erosion with that of excision.

Mr. JESSETT congratulated Mr. Owen on the results of this method of procedure. He had treated three joints so himself. There was no shortening; a great point over resection. The danger to life was more in resection than erosion. He remembered one case, an ankle-joint, the whole of the os calcis was diseased, he contented himself with scraping, and got a good result. If he again met with a case he would be inclined to adopt the same measure.

Mr. D. COLLEY operated on one case at the ankle joint with good result. He also did a knee-joint which did not do so well. It was cleared out thoroughly by two lateral incisions. It did badly; he excised, and found central necrosis; the patient got better rapidly. As good or better results were obtained in children by resection one need not fear shortening; pare off only a small portion of the osseous surface, and there would be no interference with the subsequent growth of the limb.

Mr. BRUCE CLARKE referred to a more chronic case under his care, in which the leg was bent at an angle. He divided the ligaments and removed the synovial membrane, and got a straight position and good results; there was a decided amount of movement and very little limping after. If the erosion were performed at an earlier period a movable joint might result.

Mr. BENNETT asked what Mr. Owen thought to obtain. Did he operate with a view to a stiff or a movable joint? If he wanted ankylosis was this operation as certain or as likely as excision to be followed by it? If erosion were limited to those cases where synovial membrane only was affected with no diseases of cartilage or ends of bone, a joint could be left with as good movement as it originally had.

Mr. BENTON understood Mr. Owen to say he expected bony ankylosis. He was afraid he would be disappointed. Cases such as this went into the country and had a fall, and being away from the treatment often disimproved. Three weeks after operation he would advise passive movement to be commenced.

Mr. OWEN in reply : We did not know yet which operation afforded the best results—erision or excision. Guy's of course was celebrated for excision, but he had seen cases after that operation with as much as 3, 4, 5, or even 8 inches shortening. It was of course preferable to perform erision early, as then it would be followed by no loss of movement. He looked upon erision as a great advance in surgery. It should be performed early, and done thoroughly ; it would then leave a movable joint, whereas excision left the joint certainly stiff, and probably shortened.

### CASE OF DERMATITIS HERPETIFORMIS.

By Dr. STEPHEN MACKENZIE.

THE patient, a male, aged 40, was in good health until Christmas, 1885, when, after sleeping in a damp bed, he caught a cold, and had running at the eyes and nose. He came under Dr. MacKenzie's care on January 5th, 1886, at the London Hospital, and has remained under observation ever since, a great part of the time having been spent as an in-patient. When he was first seen he had a vesicular eruption on the face and ears, neck, scrotum, and penis. The vesicles were arranged in clusters, and a difficulty was experienced in deciding whether it was a herpes or pemphigus, as a few bullæ were present also on the arms and legs. In addition to the vesiculo-bullous eruption, he had a more or less pigmented erythema marginatum et circinatum, especially seen on the trunk and upper extremities. There was no itching. There were numerous vesicles on the tongue and buccal mucous membrane. Since that date there has been a constant succession of bullæ, chiefly on the face and extremities, scarcely at all on the trunk. The whole of the body has been covered with ringed erythema, and the mucous membrane of the mouth has never been free from vesicles or bullæ. Three points appeared of special importance :—

1. The erythema and bullæ were in no sense interdependent. The erythema was not followed by bullæ, and bullæ appeared on parts not erythematous.
2. There had been throughout the course of the disease practically no itching.

3. The eruption which in the first instance was chiefly vesicular soon lost this character, and was afterwards bullous.

The case corresponds in all particulars save one, absence of pruritus, with what has been described by Duhring as "dermatitis herpetiformis." The absence of itching was the more remarkable that the appearance of the eruption was just such as would be expected to be attended with irritation of the skin. Some cases of this kind had, as Duhring stated, been described as "pemphigus prurigmosus." As pointed out by Duhring, dermatitis herpetiformis is the same disease as has been described as herpes gestationis (a water-coloured drawing of a case of this affection in a patient under the author's care illustrated this), and it was the same as that previously described by Bazin, Fox, and Crocker as hydroa. The disease is undoubtedly rare. The cases were characterised by the multiplicity of the lesions, erythema, vesicles, bullæ, and pustules being present in the same case concurrently or consecutively. They were often very rebellious to treatment and prone to relapse. In the present instance arsenic had appeared to exercise some beneficial influence, but it had even in large doses only controlled the disease, which was still present. Cold appeared to aggravate the complaint.\*

#### A CASE OF CYSTITIS WHICH, AFTER RESISTING WASHING OUT AND CYSTOTOMY, WAS CURED BY THE CONSTANT CURRENT.

By W. BRUCE CLARKE, M.B., F.R.C.S.

J. F., aged 36, a carman, came to me on January 2nd, 1886, suffering from cystitis; beyond the fact that he had been exposed to the cold a good deal lately, no cause could be assigned for his trouble.

As no ordinary remedies seemed to be of the slightest avail, and as he complained that he was frequently obliged to get up as much as ten and twelve times a night to pass water, and was so worn out as to be quite unable to work, he was taken into St. Bartholomew's Hospital on March 3rd, 1886.

March 3rd.—At present he passes a certain amount of blood

\* See an important paper by Crocker in 'British Medical Journal,' May 22, 1886.

with his urine, and the region of the bladder is tender when pressure is made over the pubes. He has pain at the end of the penis on micturition.

Urine, acid, 1010, contains a good deal of pus and some albumen. Sounded with a negative result.

April 7th.—Since he has been in hospital his bladder has been washed out daily with a solution of brine, and he has been taking benzoate of potash and other drugs. He is in no way improved.

July 3rd.—He has had his bladder washed out during the past three months with water up to a temperature of 130° F., with boroglyceride and with boracic acid, but though there has been a partial improvement it has only proved to be temporary. On several occasions he has had rigors, and his temperature has risen so high as 103° F. At times his pain has been very severe.

Cystotomy was performed, and the finger was introduced by the perineal wound into the interior of the bladder, the whole of which was readily explored when the other hand was placed on the abdomen. Beyond the fact that the walls felt rather harder than natural, and somewhat sacculated, no pathological change was detected.

August 30th.—Daily washing out with boroglyceride was continued, but though temporary improvement has taken place, he remains much the same, and since the bladder wound has so far healed as to enable him to retain his water, he rarely passes a night without getting up five or six times to micturate.

The constant current (five milliampères current strength) was ordered to be employed three times a week, the negative electrode being introduced into the bladder and the positive placed over the sacrum.

October 1st.—On my return from my holiday I found the patient had become practically well and had left the hospital.

October 20th.—There is a slight recurrence of the symptoms; he gets up at night to pass his water.

November 10th.—Though he has been attending once a week to have his bladder galvanized, he is in the same condition.

Galvanism ordered four times a week for a quarter of an hour each time (current strength five milliampères).

November 29th.—He is now perfectly well, and has returned to his usual work for the first time since March 13th, and remains well now, August 24th, 1887.

*December 6th, 1886.*

ON THE ADVANTAGES OF GYMNASTIC EXERCISES  
IN THE HORIZONTAL POSITION IN THE TREAT-  
MENT OF LATERAL CURVATURE OF THE SPINE  
BY THE USE OF A NEW EXERCISING PLANE.

By Mr. WILLIAM ADAMS, F.R.C.S.

IN the treatment of lateral curvature of the spine, I have always recommended a combination of the various methods, or so-called systems of treatment, such as recumbency, muscular exercises or gymnastics, and mechanical support, rather than relying upon any one system exclusively. The degree in which they should be combined must vary according to the nature of the case, age, and other circumstances.

As a general rule, in cases of lateral curvature occurring during the period of active growth—say from 12 to 16 years of age, I recommend reclining either on a reclining board, or Ward's reclining chair, four hours a day; thus the spinal column is relieved from its work of supporting the head and upper extremities, as well as a considerable portion of the trunk, for at least one-third of the day. In some cases, more especially where curvature is commencing in the lumbar region, it is desirable to increase the recumbency to six hours a day.

In combination with recumbency I also recommend gymnastic exercises to be taken partly by the use of a single or double trapèze bar, according to the nature of the case; and partly in the horizontal position. The single trapèze bar is sufficient for the great majority of cases, and I have always employed it; but a few years ago it occurred to me that by means of a double bar, *i.e.*, one bar placed 4 inches higher than the other, we might develop the muscles, and expand the chest on one side more than the other, where this may appear to be indicated.

For gymnastic exercises in the horizontal position, I have recently employed an improved exercising plane, made at my suggestion by Mr. Ernst, and now exhibited to the Society. See Figs. 1 and 2.

## ADAMS' EXERCISING PLANE.

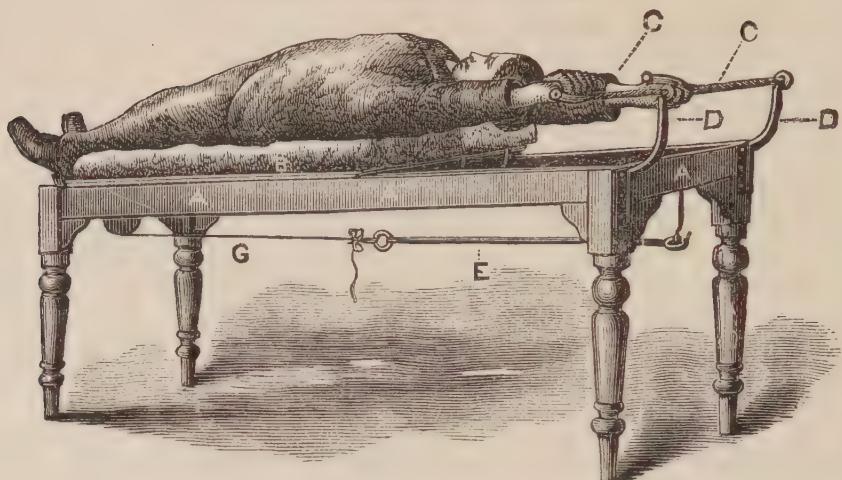


FIG. 1. Showing boy in first position, with arms extended, before drawing up the weight of the body:—

- A, A. Frame of exercising plane.
- B. Sliding board fitted with rollers, and movable up the inclined plane in grooves at the sides.
- C, C. Exercising cords with handles.
- D, D. Metal bars to which the exercising cords are attached.
- E. India-rubber accumulator which can be connected with the sliding board by a cord, G, passing over a pulley, F, to increase the weight to be moved when this is desirable.

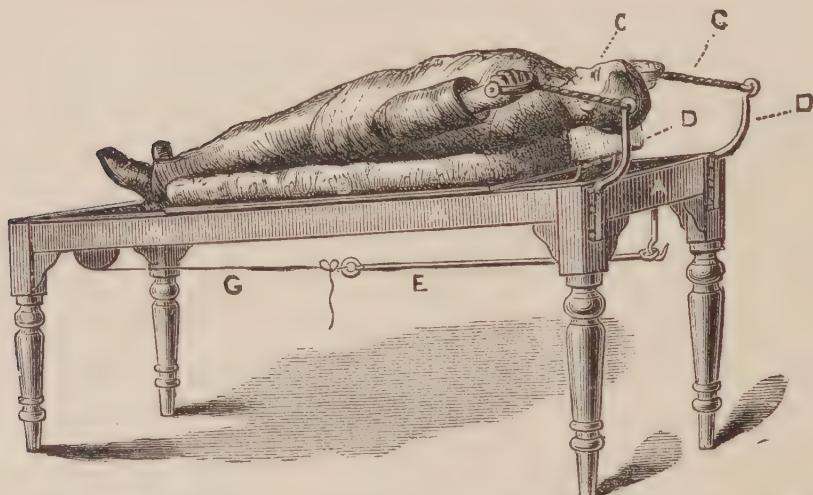


FIG. 2. Showing boy in second position, after he has drawn up the weight of the body to the top of the couch.

*This plane is 6 feet in length and made on the incline, having a sliding board half the length fitted with rollers, and movable up and down the inclined plane in metal grooves at the sides. At the upper part of the plane two exercising handles are attached to upright metal bars.*

The exercise essentially consists in the patient drawing herself up the inclined plane whilst the body is resting on the sliding board or movable stage, which is softly cushioned. The exercises should be taken while the patient is lying alternately on the back and stomach, so that both the spinal and chest muscles are exercised and developed. When desirable, the weight of the body can be increased by attaching an india-rubber accumulator to the sliding board. One arm can also be exercised more than the other when required, by altering the length of the cord to which the exercising handles are attached.

In taking the exercise the patient must grasp the handles at the top of the couch, and draw the body gently up to the top. After remaining in this position a few moments, the patient must allow the body to descend gradually to the lower part of the couch. This movement may be repeated several times, say from five to ten at the commencement, after short intervals of rest, and gradually increased, but always avoiding fatigue. The exercise altogether on the plane should last from a quarter of an hour to twenty minutes, and if the exercise on the trapèze bar should be taken for ten minutes, a period of half an hour altogether will be occupied in the exercises, and this should be repeated two or three times a day.

*Gymnastic exercises* systematically conducted whilst the patient is in the *horizontal position* possess the great advantage of strengthening the muscles and improving the general health, at the same time that the mechanical conditions which tend to increase the curvature, and which are inseparably connected with the erect position, are completely removed. I know of no plan by which this can be so well carried out as by the use of the improved exercising plane which I have recommended. This, together with the use of the trapèze bar, may be said to form a system of home gymnastics, especially adapted to cases of lateral curvature.

As a general rule, all exercises taken either in the standing or sitting position are objectionable, as the spine is still bearing the weight of the trunk and upper extremities. Several of the older authorities on spinal curvature fully recognised the importance of this. The first exercising plane was suggested by Mr. John Shaw, and a diagram explaining the principle on which it acted is figured in his valuable work on 'Lateral Curvature,' published in the year 1823.

Mr. Amesbury also carried out this principle in his treatment of lateral curvature, and the exercising plane he invented I formerly employed with great advantage.

This combination of gymnastics with recumbency will be found sufficient for the treatment of all cases which I have described as physiological curvature; but in cases of structural curvature, *i.e.*, when structural changes with rotation of the bodies of the vertebræ have commenced, mechanical support in some form must be added to the other means.

*The diagnosis* between the physiological and structural curvatures may be easily made by examining the patient in the stooping position. In the *physiological curvatures*, the angles of the ribs in the dorsal region, and the transverse processes in the lumbar region, remain symmetrical on the two sides and on the same level. In the *structural curvatures* the angles of the ribs in the dorsal region on the convexity of the curve bulge or project backwards, and sink in or are depressed on the opposite side, *i.e.*, in the concavity of the curve. Likewise in the lumbar region, the transverse processes on the convexity of the curve project backwards, and throw into undue prominence the spinal muscles in this region; whilst on the other side in the concavity of the curve the transverse processes are depressed, and the spinal muscles rendered less prominent.

*The stooping position* is therefore the diagnostic test between the physiological curves in the first class, and the commencing and confirmed structural curves in the second and third classes. This was, I believe, first pointed out by myself, and published in the first edition of my work on 'Lateral Curvature of the Spine' in the year 1865, but I arrived at this conclusion after a post-mortem examination which I made of the body of the late Dr. Gideon Mantell in the year 1852, and the specimen of this case is now deposited in the Museum of the Royal College of Surgeons. Lithograph plates showing the appearances externally and internally are amongst the illustrations in my work on 'Lateral Curvature of the Spine.'

The cases grouped under the head of structural curvature admit of being again divided into two subdivisions, viz., 1st, cases of commencing structural curvature in which the intervertebral cartilages alone are beginning to suffer from irregular compression; and 2ndly, cases of confirmed structural curve, in which the inter-

vertebral cartilage, the bodies of the vertebræ, and the oblique articulating processes, have all undergone structural changes, and become adapted to the form of curvature produced.

In the slighter cases very little mechanical support is required, such as a pair of ordinary stays, with elastic shoulder straps, and a steel bar at the back; or a light steel spinal support with spring plates, to act essentially as a retentive apparatus to prevent increase of curvature in the standing and sitting positions.

In the cases of confirmed curvative a stronger spinal support is generally required, but whether with spring plates or movable lever plates, or whether in some cases a poroplastic felt jacket should be preferred, will depend upon the age of the patient, the form and degree of curvature and the probability of being able to obtain improvement during the period of growth, and to arrest its progress after this period.

The plaster of Paris jacket, the last form of mechanical support introduced by Professor Sayre of New York, is not I think applicable to any cases of lateral curvature, as it tends to weaken the spinal muscles, and hinders the use of gymnastic exercises. It also interferes with the free action of the chest and respiratory movements. Troublesome sores are sometimes produced by pressure or friction over the bony prominences either of the pelvis or spine. The plaster of Paris jacket also acts as an unnecessary restraint at night, when no good can be done by keeping a lateral curvature in a rigidly fixed position; and by its constant use it also interferes with bathing and cleanliness, so necessary to the maintenance of the general health.

Some of these disadvantages have been lately got rid of by Professor Sayre's plan of opening the jacket in front, and making it lace in the same way as the poroplastic felt jacket, but the felt is so much lighter and easier of application that I much prefer it. The gain in height which is obtained by straightening the spine during suspension—either when the plaster of Paris or felt jacket is applied—I have always found to be lost in a day or two. Generally, I prefer the use of steel spinal supports, which are now made much lighter and fit more accurately than they did some years ago. The spring plates also, which do not require the attention of the surgeon in most cases, give sufficient support; whilst in other cases the stronger instrument with movable lever plates may be required.

By the combination of recumbency with gymnastic exercises, which I have described as applicable to cases of physiological curvatures, and in the more severe cases the combination of recumbency and gymnastic exercises, with the addition of mechanical support in some form best adapted to the requirements of each case, there can be no doubt that the spinal curvature when slight will be removed, and in the later stages its progress will be arrested.

Mr. OWEN asked whether Mr. Adams had seen the masterly contribution of Mr. Bernard Roth on this subject in Heath's 'Dictionary of Surgery.' It appeared to him that Mr. Adams was "running with the hare and hunting with the hounds." He had hoped to hear that rigid supports had been abandoned. Were these leather appliances with steel bands any better than poroplastic or plaster of Paris? He would abandon them all as they checked the growth of muscles, which, on the contrary, should be encouraged to become daily more vigorous, and he would rely on rest and gymnastic exercises.

Mr. BERNARD ROTH was much disappointed with Mr. Adams's paper. He did not think a single new fact had been brought forward since the appearance of the last edition of Mr. Adams's book. He had had under his care a certain number of cases after they had been through Mr. Adams's hands. He read an account of 200 cases at the meeting of the British Medical Association at Cardiff—unfortunately, 100 of these were eliminated by the Editor of the 'British Medical Journal.' Eight of them had previously been under Mr. Adams's care for varying periods. Mr. Adams required one to two years to treat a case with average deformity, whereas with his method, details of which would be found in Heath's 'Dictionary of Surgery,' all that was possible could be done in three months. In children of 12 to 16 years Mr. Adams required them to maintain a recumbent posture four to six hours daily, and in one marked case he had ordered six hours daily for six months, and then nine hours for another nine months, but such treatment surely would not increase muscular power. If in addition a rigid support was applied, physiological exercise of muscles was quite prevented. Keeping a patient lying down would not teach him how to sit up or stand. When supports were discontinued they relapsed at once; they were not prepared for the erect position. Mr. Adams had gone very little into the details of his apparatus; the shoulders would be raised by it, but that would not work the spinal muscles. This was best done by letting the patient lie down on a form with the back projecting over it, and then teaching him to raise himself into the sitting position. He showed a case at the Clinical Society which for two years had worn steel supports, and for four years had been reclining. After three months' treatment she was practically cured. It was now four years ago; she has been on the stage three years and has not relapsed; there was structural change in the lumbar vertebræ. Another case which had worn a support for six years was going from bad to worse. He showed her before and after a three months' course of treatment. At the end of that time her general health was much improved, she could walk three or four miles without a support, and was cured as far as cures in such cases are possible. In order accurately to register his results, he took cyrtometer tracings of the body circumference

below the scapular angle, and at the level of the third lumbar vertebræ. He thought this a better plan than referring in loose terms to the degree of flexion or rotation present. He quoted the case of a girl who had been for fifteen months under Mr. Adams, who had spent £23 14s. 6d. for apparatus, and in whom at the end of the treatment there was an increase of the lumbar deformity. By his own method in three months he made that girl as strong as she could be. Sixteen months afterwards he saw her, and she had been well ever since. He came forward purposely in an aggressive spirit, as his own two previous papers on this subject had been followed by no discussion. He wished to contrast exercise with supports and lying down against exercise with nothing else. Mr. Walsham had recorded results of treatment of seventy-five cases, and he got better results with exercise alone, without posture or supports.

Mr. BLACK felt ashamed to bring forward individual instances. He saw a case at the North-West London Hospital where the head was bent quite down on the sternum. He ordered posture treatment, and in ten days the head was in its right position. In another case he removed a Sayre's jacket, and treated by posture with good results. All would be indebted to Mr. Adams for his demonstration of the value of the moving plane.

Mr. PYE said that Mr. Roth meant to be aggressive and certainly was so, but it was pleasing to have a protest against the too free use of expensive machines ; it was, however, possible to overstate the case, for surely there were some cases of lateral curvature with rotation where a support was necessary to enable the functions of life to be carried on with comfort. The liver was pressed on, there was absence of menstruation, and those cases cried out for support, and an enormous amount of good was done by extension, or a poroplastic jacket or a spinal machine. He had seen the greatest advantage follow the use of supports : they were not curative but were better than permanently reclining on a couch.

Mr. H. F. BAKER agreed with Mr. Adams as to the value of supports.

Mr. BENHAM spoke of the practice of the Orthopaedic Hospital, where exercise was tried at first, but in severe cases supports such as poroplastic jackets gave the patients an opportunity of gaining a livelihood.

Mr. CARTER was compelled to say by respect for an old teacher that Mr. Roth was in error, for Dr. Little was the first to publish a pamphlet on this subject twenty-five years ago.

Mr. ROTH : But Dr. Roth published a paper more than twenty-five years ago.

Mr. ADAMS in reply said that all his experience had led him to adopt a combination of exercise with support. He utterly denied that muscular exercise could produce improvement in structural curves. He was sure that Mr. Roth would do as much as anyone could in physiological curves, and in a certain number of slight structural curves, but in other cases no benefit would follow his method. Where two short equal curves existed, they would be followed by arrest, but with two structural curves, one longer than the other, they would never stop, even though the patient lived 100 years. Steel supports were formerly used as active instruments of pressure, but they were now used only as passive agents.

## A NEW METHOD OF PERFORMING EXCISION OF THE KNEE.

By HERBERT W. ALLINGHAM, F.R.C.S.

A NEW method of excision of the knee is a title which may perhaps surprise you, for when I have enumerated the various operations that have already been performed, you may think it hardly possible that a new one could be suggested; however, not only is it new, but has, I maintain, many advantages over the methods of excision for knee-joint disease at present in vogue.

I will first proceed to give a short *résumé* of the various methods that have been employed in excising the knee from its earliest times.

1. The health of the patient being good, an attempt may be made to save the ends of the bones by making postero-lateral incisions, so as to thoroughly drain the joint. From the wounds the pulpy material is scraped out. This method is advantageously employed in young patients.

2. Mr. Mackenzie's U-shaped incision, which is commenced above the condyles at their sides, and extends nearly to the tubercle of the tibia, this large anterior flap containing the patella being turned up, the excision is completed in the ordinary way.

3. A transverse incision across the joint below the patella, the extremities of the wound being carried well backwards, so as to ensure free drainage; this method was originally suggested by Mr. Park.

4. The H-shaped incision, first employed by M. Moreau, consists of a longitudinal incision on each side of the joint with a transverse cut immediately below the patella; this operation was varied by Mr. Jones, of Jersey, who made two lateral incisions and a transverse one, the latter cut only dividing the skin, which was turned up, and the capsule of the joint opened, then the patella with the quadriceps tendon and ligamentum patellæ was pushed to the side of the joint.

5. Mr. Golding Bird makes use of a transverse incision across

the joint, over the patella, dividing that bone in two, and brought together with carbolised silk sutures the upper and lower fragments at the completion of the operation.

6. The tenon and mortise method, advocated by Mr. Davey, consists of sharpening the end of the femur, and impacting it into the tibia.

7. Mr. Treves, of Margate, advises lateral incisions only; one on each side of the joint, without any transverse wound. The ligaments should then be divided, and the synovial membrane opened. A narrow director is then passed in front of the posterior ligaments, the crural ligaments cut through, and the diseased bone removed.

8. M. Ollier lays great stress on the importance of preserving the periosteum, making an H-shaped incision to expose the bones, and additional lateral incisions for drainage. He does not divide the lateral ligaments, but removes the patella and sutures the quadriceps tendon above and the ligamentum patellæ below.

9. A transverse incision above the patella dividing the quadriceps tendon was suggested by the late Mr. Royes Bell. The patella then being slipped down, so as to expose the joint, thus the lateral ligaments are uninjured.

10. The joint has been excised by crucial, oblique, and various other incisions.

The method which I submit to you for criticism and trial I tried several times on the dead body, and having carefully considered every point in the performance of the operation in May of this year, I excised the knee of the patient before you.

The operation is performed in the following manner. A vertical incision is made over the joint, beginning about from two to three inches above the patella, and prolonged over the patella down to the tubercle of the tibia.

Above the knee-cap the knife splits the quadriceps tendon right into the synovial pouch above the joint, the soft tissues over the patella are divided to the bone, and the knee-cap sawn through, dividing it into two lateral halves, the ligamentum patellæ is also split down to the tubercles of the tibia. Now we have the patella divided vertically, each lateral portion having half the quadriceps tendon and half the ligamentum patellæ attached to its upper and lower borders respectively. These halves are then slipped well to the sides of the joint, so exposing the condyles of the

femur and the head of the tibia. Divide the crural ligaments if these are not already destroyed, then the leg being flexed, push the condyles of the femur forwards on to the tibia, and remove a thin layer of bone. Now deal with the head of the tibia by completely flexing the leg on the thigh, and carefully separate the internal lateral ligament from the internal semi-lunar cartilage, which is most important, for this attachment tends to prevent the tibia coming forwards into the condyles of the femur, and in order to avoid dividing the lateral ligaments a thin slice is removed from the tibial articular surface with a strong knife or chisel. It is necessary to follow these particulars, so as not to interfere with the lateral ligaments.

With scissors or forceps the synovial membrane must be carefully dissected away from the synovial pouch above the patella and underneath the ligamentum patellæ, in fact as far as possible the joint had better be cleared of synovial membrane. At this part of the operation openings for drainage should be made at the postero-lateral aspects of the joint, on the outer side between the ilio-tibial band and the tendon of the biceps, and on the inner side just in front of the inner hamstring tendons; the best place for these openings is on a level with the upper border of the patella, which is the lowest point, and where the drainage-tubes will not be pressed upon by the fibrous structures around the joint. Attention is now turned to the split patella, which if not diseased should be left; if only a little of the cartilage is eroded, cut it away with a knife; should, however, the patella be extensively diseased, carefully separate the quadriceps, the extension of the quadriceps tendon over the patella, and the ligamentum patellæ from the bone. In other words, shell the patella as a sesamoid bone out of the entire quadriceps tendon without destroying the connection of the quadriceps muscle with the ligamentum patellæ. If the patella is to remain, the halves are sutured together by a strong catgut suture introduced as advised by Sir Joseph Lister in wiring fractured patella, that is not going through the articular surface with the catgut. If the bone has been removed, bring together with catgut the extension of the quadriceps which has been carefully separated from each half of the patellæ.

Lastly, adjust and sew with fine catgut from the tubercle to the patella the split ligamentum patellæ, and in the same way deal with the divided quadriceps tendon above the patella. The

skin is then united with separate sutures, and the limb dressed antiseptically.

In pointing out the advantages of this operation, I must ask you to allow me first to allude to a few important anatomical facts. The fascia is strong and thick around the knee, and is strengthened by expansions from the biceps, sartorius, gracilis, semi-tendinosus, and quadriceps extensor, and is attached to the condyles of the femur and the tuberosities of the tibia. The rectus femoris and the vasti are attached, the rectus to the upper part and the vasti to the sides of the patella. From these tendinous fibres pass across the patella, and become continuous with the ligamentum patellæ. In fact the patella is regarded by many anatomists as a bone developed in the tendon of the quadriceps extensor muscle, which is inserted into the tubercle of the tibia.

The external and internal lateral ligaments are inserted nearer the back than the front of the knee-joint.

Bearing these important points in mind, I humbly submit the following advantages will be obtained by operating in this way:—

1. The attachments of the fascia lata, the lateral ligaments, and the prolongation of the vasti to the tibia and fibula, are not divided as they are in nearly all the other methods employed, consequently there is much more support to the joint during the healing process, and when the leg is well.
2. Above the patella the synovial pouches are well opened, and all the synovial membrane can be thoroughly removed.
3. Dislocation of the tibia backwards, and tilting of the femur forwards, which commonly occurs after the operation, is thus prevented.
4. The joint and the ends of the bones can be thoroughly examined, whereas in those methods of excision by lateral incisions, I can hardly imagine how a good view can be obtained.
5. The undivided quadriceps is a strong antagonistic to the hamstring muscles, and should the splint be left off, the leg is much less likely to become bent.
6. Progression is greatly improved, the attachment of the quadriceps being neither divided nor the muscle shortened, as must necessarily take place when either the transverse or the U-shaped operation is performed.

7. And, above all, as we hope after excision to obtain movement in the knee-joint, I think the chance of such a result being brought about will be greatly facilitated by the operation submitted to you to-night.

CASE 1.—Frederick H., aged 9, a delicate-looking boy, family history good. Previous history : when 5 years old he had scarlet fever, followed very soon after by measles. A short time after the fever the child complained of pain in the knee, accompanied with swelling of the joint. He was taken to Guy's Hospital, and attended there as an out-patient for sixteen months. He then went to the country, but the knee did not improve there, being frequent pain and swelling of the joint. A fall greatly aggravated the disease, and the leg became flaccid on the thigh. On April 22nd I saw him, and found the joint in the following condition. The right knee-joint was swollen, hot and tender, the leg being bent, so as to form nearly a right angle with the thigh. The tibia was displaced backwards and outwards. Muscles of the leg wasted, and the synovial membrane thickened, and having an abscess at the lower and outer part of the joint. The joint was fixed, and any attempt at movement caused the child pain. Measurement round the *right knee* over the patella,  $12\frac{1}{2}$  inches, the *left*,  $11\frac{1}{2}$  inches.

On May the 6th, I operated in the manner before described, removing all the synovial membrane, which was greatly thickened and diseased, and cut thin slices off the tibia and femur. The patella being healthy was left and sutured with catgut.

The split quadriceps muscles and ligamentum patellæ were also sutured, lateral drainage being used.

May 7th.—There being extensive oozing the leg was dressed under ether ; temp.  $101\cdot6^{\circ}$ .

May 8th.—Boy had restless night, no pain, vomited, and there was a trace of carbolic in the urine ; temp.  $101^{\circ}$ .

May 12th.—Temp. normal, and from that date remained normal. As no discharge came through the dressing, the patient being quite comfortable, the knee was not touched again until May 20th, thirteen days after the first dressing. The wound was then quite healed, so the sutures and drainage tubes were removed, there being only a little bloody discharge, no pus on the dressings. Antiseptics were again applied.

June 2nd.—The knee was dressed again, antiseptics being now discontinued. The openings occupied previously by the drainage tubes were healed. A small piece of the cicatrix about the size of a farthing had slightly broken down. Bones were well united, side splints which had been used were discontinued, and the ulcer dressed with zinc ointment.

July 1st.—Another part of the scar broken down, otherwise the patient was quite well, no pain, no bone to be felt on probing the wound.

July 20th.—Went to the country, the leg being enveloped in a strong leather splint.

August 17th, 1887.—Knee quite well, and since that time remained well.

CASE 2.—Alfred T., 8 years old. Family history : father died of phthisis, one sister had abscesses, five brothers and sisters died of various complaints when quite young. His history was as follows : about four years ago, after an attack of measles, the right knee became swollen and

painful ; he was then taken to Great Ormond Street Hospital, and the leg put up in plaster of Paris ; about a year after this the left knee became affected, and was treated in a similar manner. He then went to the Orthopædic Hospital, when the knees were treated with Scott's bandages, and the child sent to the sea-side. The right knee got well, but the left continued to go to the bad ; on his return from the country he attended at the Homœopathic Hospital, and the left knee was there treated for some time.

On the 20th of September I saw him and found his general condition good, heart, lungs, and kidneys healthy. The *right leg* was thin, and the muscles rather wasted, the leg being slightly flexed, but the knee in a fairly healthy condition. The *left knee* was swollen, and the leg considerably flexed on the thigh, any attempt at movement caused the patient pain, there was also a tender spot on the inner side of the joint. The measurement round the right knee was  $10\frac{1}{2}$  inches, around the left  $11\frac{1}{2}$ .

On October 1st extension was applied, only 3 lbs. being used, but as this caused the boy such pain, and the knee becoming swollen, it had to be discontinued.

After the joint had quieted down on October 12th I excised the knee by the method I advocated. On opening the joint, the cartilages of the femur, tibia, and patella were found to be ulcerated, necessitating an extensive removal of all the cartilaginous surfaces. The synovial membrane was thick, pulpy, and in an unhealthy condition, and was therefore entirely removed. Posterior drainage was used, and the limb dressed antiseptically. The next day ether was administered, and the leg redressed. The temperature that night rose to  $100^{\circ}$ , the child having a restless night, and vomiting several times. Everything continued well until October 18th, when his temperature went to  $102^{\circ}$ , so the leg was again dressed, and it was found that pus was oozing from the lower end of the wound, so two sutures were removed, and the lower part opened up.

October 22nd.—Temp.  $100^{\circ}$ , but as some discharge had come through the dressings they were removed, and the leg redressed. That night the patient was very restless and semi-delirious, which I am inclined to think was due to slight carbolic poisoning. As this passed off, and the temperature remained low, the leg was not touched again until October 24th, when the temperature being  $99.6^{\circ}$  at night, normal in the morning, and the wound healed, except a small piece at the upper and lower part, the suture and drainage tubes were removed.

November 2nd.—Carbolic was discontinued, and iodoform used, as the scar looked sodden, and a small spot was breaking down about the middle.

November 12th.—The wound was dressed with zinc ointment, and the long outside splint discontinued, there was fair union, and the child looked fat and well.

November 22nd.—Lotio rubra had been used for some days with a result that the broken-down portions of the scar had nearly healed, there being only a little watery discharge.

December 5th.—Knee improving, union firm, only two small ulcers over the cicatrix.

Having related the two cases I wish to call attention to a few important facts in connection with the operation and the after treatment of these cases of excision.

It is needless to say that such an operation as laying open the knee-joint must be undertaken with antiseptic precautions. I am not much in favour of the spray, but the part must be kept constantly wet with the antiseptic used.

Very thin slices of bone with the diseased articular cartilage should be removed, any further diseased portions being cut away with a gouge or trephine.

All the synovial membrane must be carefully dissected out.

Drainage tubes must be inserted well at the back of the joint, and not between the ends of the bones as is sometimes done.

Ether ought to be administered the next day, and the limb dressed, because after these operations there is always abundant oozing, so by dressing the next day the part is placed in the most advantageous state for healing, and as a rule does not necessitate the limb being dressed for a couple of weeks.

With regard to the splint, it is agreed the best is that which keeps the legs at perfect rest, so preventing any movement of the femur on the tibia, and in which the discharge can be easily cleaned from between the leg and the splint, without it being necessary to take off the splint until the knee is quite healed and the union firm. The splint I used consists of a foot-piece and a wooden back-piece, extending from the foot to the gluteal fold. This is padded and covered with two thicknesses of mackintosh on surrounding the splint, and stitched at one side, the other put over the mackintosh already enveloping the splint, and sewn at the opposite side, thus the padding cannot become saturated by discharge. Two long side splints were also used, one reaching from the foot to the axilla, the other from the foot to the perineum.

When the operation is completed the leg should not be first surrounded by dressings, which would necessitate taking the leg off the splint whenever it is dressed, and so greatly disturbing the ends of the bones, but placed on the back splint, and then the dressings applied, at the same time packing any space between the legs and the back splint with antiseptic wool. The outside dressings should extend from the foot to the groin, surrounding the entire leg and back splint. The side splints are then put on.

By so doing, when the limb is redressed there is no necessity to move the knee in the slightest degree; should any discharge have found its way between the leg and the splint, it can be easily

removed by a probe covered with wool gently passed between the leg and the splint.

In dressing the joint it is needless to forcibly syringe it out, which fills it up and separates the uniting tissues, thus delaying any attempt at rapid union, but by good even pressure and draining the joint from the lowest part syringing will rarely be necessary ; if it is, extreme gentleness should be used.

Lastly, I wish it to be understood that by this operation I hope the patients may be able to have a movable knee-joint, as this method is especially suited to those cases in which the synovial membrane is chiefly involved.

The next case I operate upon I intend to thoroughly remove the synovial membrane, and only dig out with a gouge the diseased spots on the cartilage, and shall not in any way interfere with any of the cartilage that looks healthy.

If the crural ligaments are not extensively diseased they shall be left undivided. The joint shall then be kept at absolute rest until the wound has healed, when I shall commence passive motion.

Mr. ADAMS thought the result as good as could be obtained. He agreed that it was not necessary to make the larger removal of bone in all cases ; so much would depend on the amount of disease, and whether it commenced in the bone or synovial membrane. He had hitherto preferred a lateral incision, but where a larger operation was required he liked this method.

Mr. OWEN complimented Mr. Allingham on the result, but recommended him to try erosion instead of excision. He thought by this method haemorrhage would be less, but he wondered whether a complete view of the articulation could be obtained. What antiseptic was used ? Mr. Tait used water, others used perchloride of mercury. There was much truth in Mr. Savory's remark that every careful surgeon is antiseptic.

Mr. MORGAN would have liked to have heard a short review of the methods of excision. They all involved either the patella or its ligament. In cutting across the joint the skin was severed, and the tibial attachment of the femoral muscles, and it must be better to leave these untouched rather than to have to stitch them together afterwards. Excision was an operation he preferred to avoid even in the knee, but if it were necessary he thought Mr. Allingham's operation would allow us not to do an excision at all, for he could get a complete insight into the joint, and do an erosion, and if necessary gouge either tibia or femur ; it would be followed by little shortening and little interference with the epiphyseal ends. He had seen a large number of excisions and results, and the latter only confirmed his dislike and horror of the operation. He thought this operation gave us an opportunity of leaving the joint in a much better condition than any other operation as practised heretofore. In posterior dislocation of the tibia, he would like to know whether Mr. Allingham thought his operation would be sufficient should ankylosis exist.

Mr. ALLINGHAM, in reply, said a much better view was obtained by this incision than by any other method that does not divide all the structures at the front and sides of the joint. He had used carbolic acid dressings.

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*December 13th, 1886.*

## CASE OF INTRAPERITONEAL HÆMORRHAGE IN A NEW-BORN CHILD.

By Dr. J. KESER.

I HAVE had occasion to observe, some months ago, a case of intraperitoneal hæmorrhage in a new-born child of the male sex, and I venture to bring it before this Society on account of its exceptional character.

The child was born at full term on April 29th, and the labour, which lasted about five hours, was normal. The liquor amnii was very abundant, and contained some meconium. The child was in a state of apparent asphyxia, but the respiration became regular after the chest and face had been slapped two or three times with a wet handkerchief.

On April 30th, the child lost a few drops of blood from the nose, and on careful examination a small ecchymosis was found under the conjunctiva of the right eye, above the cornea; the left half of the scrotum was slightly swollen, and had a bluish tinge. The child took the breast well, and did not seem to suffer.

On May 1st, the swelling of the scrotum had increased, and there was some œdema of the penis. The bowels had acted well, and a good deal of urine had been passed. The following day there was no apparent change.

On May 4th, the scrotum was much swollen, and formed a bilobed tumour as large as a walnut, rather hard and bluish; no pulsation could be detected in it; the penis was œdematos. There was a small bluish ecchymosis on the right side of the abdomen, below the umbilicus; the alveolus of the left central incisor of the upper jaw was distended with blood. The child had had a yellowish motion, and taken the breast pretty well. Temperature in the rectum at 5 P.M., 98°. The abdomen was somewhat

distended, and the lips were pale. The cord separated on that day without haemorrhage.

On May 6th, the child was very pale and weak, and an ecchymosis had formed in the middle of the back. The abdomen was more swollen, and there was some dulness in the loins.

On the following day, the child passed a semi-solid, yellowish motion; no vomiting; the lower part of the abdomen was much swollen, and had a greenish tinge. The child, who was very pale and weak, and had taken nothing for twelve hours, died on May 8th at 1 A.M. He was therefore 9 days old.

A post-mortem examination was made thirty-one hours after death. On opening the peritoneal cavity about 8 ounces of dark fluid blood escaped. There was no sign of peritonitis, and the intestines were healthy. The spleen measured 9 cm. in length, 5 in breadth, and 2 in thickness; I may say here that, according to Birsch Hirschfeld, the dimensions of the spleen in a child 8 days old are 4 cm. on 3. The peritoneum around the hilum was torn, and discoloured by blood. The upper half of the spleen was swollen, and of a dark purple colour; the lower half was pale and the limit between the two was quite distinct. The whole upper half had the appearance of a recent infarct, but the tissues in the neighbourhood of the hilum were so much torn and disorganised that neither the obstruction in the vessels nor the exact source of the haemorrhage could be detected. The splenic artery appeared to be normal, as well as the other branches of the abdominal aorta. The heart contained only a few drops of blood, but it was of normal size and consistence. The lungs were almost entirely bloodless. No infarct could be found in any organ except the spleen. The vaginal processes of the peritoneum communicated freely with the peritoneal cavity, and contained fluid blood. The brain and spinal cord could not be examined, and I was not allowed to take away any part of the body except the spleen.

I must now say a few words about the family to which the child belonged. The mother, a strong person, 42 years of age, has been pregnant eight times; the first child was born a fortnight before term, and died at the age of 18 days, but the cause of death is unknown. Then came five stillborn children. The seventh child, born at full term, was nursed by the mother, and remained well until the end of the fourth week when epistaxis set in, followed

by hæmatemesis and melæna; large ecchymoses appeared on the trunk and limbs, and death ensued after a week's illness.

The mother has no tendency to metrorrhagia, or to any other form of hæmorrhage. The father, aged 32, is pale and thin, but has never been seriously ill, and is not a bleeder. I did not find any evidence of syphilis in him or in his wife, and they both denied the existence of hæmophilia in their respective families.

It is, I believe, evident that the child's illness was not true hæmophilia, but an affection similar in its nature to the melæna neonatorum. There had been no hæmorrhage from the mucous surface of the alimentary canal, but the child had had epistaxis, ecchymoses had appeared in different parts of the body, and another child of the family had died with the typical symptoms of the disease.

The most remarkable feature in the case was the abundant intraperitoneal hæmorrhage, caused by spontaneous rupture of the spleen. This accident is very rare.

Ritter, who has collected 132 cases of hæmorrhage in new-born children, has never observed it.

Grandidier mentions, in his book on 'Hæmophilia,' the case of a child who died 44 hours after birth, and whose peritoneal cavity was full of blood, but the source of the hæmorrhage could not be found.

Steffen has seen a case of abundant intraperitoneal hæmorrhage in a child who died immediately after birth; the spleen was very large and soft, and a rent was found on the convex surface; as there was no evidence of hæmorrhagic diathesis, the accident could only be explained, according to Steffen, by some obscure intrauterine affection of the spleen.

Billard found at the post-mortem examination of a child, 6 days old, a large quantity of blood in the stomach and intestine, and an enlargement of the spleen which was ruptured; the peritoneal cavity contained only one tablespoonful of blood.

In my case there was a well-marked lesion of the spleen; the tumefaction and congestion of the upper half appeared to be due to some arterial obstruction, and hæmorrhage had taken place at first under the capsule, and then into the peritoneal cavity. It is not possible to give a definite opinion concerning the nature of the vascular obstruction in this case, but we know that infarcts of various organs have been observed in new-born children, and

especially in those who are born in a state of apparent asphyxia. These infarcts have been attributed by Landau to emboli starting from the umbilical vein and passing through the arterial duct into the aorta. In my case this duct was closed at the time of death, but it may of course have become obliterated after the passage of the embolus.

I have therefore come to the conclusion that there had been an infarct of the upper part of the spleen, that the congestion induced by it had been followed by haemorrhage under the capsule, and that this haemorrhage, occurring in a child who had a strong predisposition to bleeding, had become very abundant; rupture of the capsule of the spleen had taken place, and death had resulted from extravasation of blood into the peritoneal cavity.

Mr. MORGAN had communicated a similar case to the Pathological Society—he did not now remember distinctly the details of it. The child's parents were perfectly healthy, they had lost one child previously with similar symptoms. He saw it with Dr. West, it was a recently-born infant, was jaundiced, and had a subcutaneous haemorrhage on the right fore-arm, followed by others on various parts of the body; they had very much the appearance of severe bruises. At the post-mortem examination there was found congenital malformation of liver and absence of patency or obliteration of the ductus communis choledochus. The condition was found usually in females and children of the same parents. Dr. Keser would find much information in Dr. West's book, with references to the literature of the subject.

## ON THE ADMINISTRATION OF ANÆSTHETICS.

By MARMADUKE SHEILD, F.R.C.S.

So much has been said and written in the last few years upon the subject of anæsthetics, that it may seem at first sight presumptive for me to appear before you to-night or superfluous to attempt to add to the knowledge we already possess of this very important branch of practice. More particularly am I conscious of this when I reflect that I can in no way pretend to possess the knowledge of a specialist in this department. But although the administration of anæsthetics in great towns is passing largely into the hands of those who especially practise and study it, yet it will ever be the duty of every well informed medical man to easily and safely administer an anæsthetic when called upon to do so. And I was encouraged by the thought that among the audience I might have

the honour of addressing at this Society there would be some to whom my remarks, though wanting in anything novel or striking, would yet be not entirely devoid of interest and utility. I have always thought that the subject of selection of an anæsthetic and the mode of its administration, admits of discussion from two points of view—from that of the surgeon as well as that of the anæsthetist. Accordingly I propose to consider the matter from the point of view of a surgeon, who, having had some experience in the practice of anæsthetics, is anxious to know whether the views he holds and methods he has adopted are generally safe and reliable.

In this communication I shall dwell especially upon those anæsthetics which are more generally used, and if I give but a passing notice to some, you will understand that I do not ignore or underrate their value, but am rather regarding the time and patience of the Society; and if I omit to discuss or mention some of the least understood anæsthetic agents, as meomeriom or the inhalation of carbonic oxide gas, you will see that it is through want of knowledge of the subject, and you may perhaps be able to supply what is lacking from the storehouses of your own memory and experience.

I suppose no one can hold the post of administrator of anæsthetics to considerable hospitals for several years without accumulating a fund of experience of which the details might be instructive, without encountering anxious and embarrassing cases worthy of brief relation, or without formulating some idea as to the more suitable anæsthetic for various cases and the best modes of administering it. I have acted as anæsthetist to various hospitals for four years, and in that time have given anæsthetics daily to all sorts and conditions of men and for all kinds of operations. And though I have not kept notes of every case, yet I have records both in writing and memory of some that have been exceedingly instructive. I agree with many whose experience has been larger than my own, in giving the preference to ether as a general anæsthetic agent. I will not say ether should be invariably administered, but for a general anæsthetic agent nothing surpasses it. I have administered it in many ways, with the various cones and inhalers, preceded by nitrous oxide gas, by chloroform and alcohol, or the A.C.E. mixture.

Of all the apparatus I have used and am acquainted with, I give

the preference to that of Clover, or one of the many constituted on like principles. If the patient be nervous and greatly dread the ether, or if, as in hospital practice, saving of time is a great object, I have been accustomed to administer nitrous oxide gas as a preliminary, the gas being gradually mixed with the ether vapour. I have also placed patients under the influence of gas, and then suddenly changed to ether without admitting air, but I think this method less admirable than the former. Now, though I have never experienced dangerous results from the administration of nitrous oxide as a preliminary to ether, and though I believe that the experience of others regarding this method coincides with my own, yet I think there are several objections to it. Great lividity of the features and respiratory embarrassment are apt to occur in those individuals who have short stout necks, and whose abdominal walls and viscera are loaded with undue accumulation of fat. The exact moment when the ether vapour should be turned on, and with what rapidity, is a matter of some difficulty to learn and decide. It is obvious on watching an experienced administrator, that he varies the turning on of the ether to suit the requirements of each patient. It is not easy to formulate any rule as to when this should be done. But to administer well after this method requires such considerable experience that I fancy it will never come into general use, especially in the country. In dental cases, however, this mode of inducing anæsthesia is doubtless most valuable. By the addition, as it were, of a short period of ether anæsthesia to nitrous oxide gas narcosis, the period of insensibility, is greatly prolonged, and the manipulations of the operator may be more and more extensive and deliberate. I have been so pleased with the results of the administration of the best anæsthetic ether in Clover's apparatus, without using any other agent as a preliminary, that I cannot but recommend it, taking all things into consideration, as the most satisfactory method of inducing and maintaining prolonged anæsthesia. If the apparatus be properly used, the patient passes rapidly under the influence of ether with but little discomfort. There is one great precaution to be adopted regarding this kind of apparatus. We must bear in mind that when the patient is deeply anæsthetised he continues to inhale the vapour of ether powerfully condensed and mixed with the products of expiration. If, therefore, a due supply of air be not admitted by temporary removals of the apparatus, cyanosis, dilatation of the

pupils, and shallow respiration, symptoms of no pleasant import, are apt to manifest themselves. The perfection of ether anaesthesia to be aimed at through a long operation is this. The patient must be kept quite flaccid and unconscious, and yet the anaesthetist must admit so much air as to obviate the dangers of over etherisation. Spontaneous swallowing movements, and the return of corneal reflex, the latter by no means a trustworthy sign, indicate the return of consciousness, which must be met by the prompt exhibition of more vapour. If we add to these observations the importance of exercising common precautions, such as the examination of the mouth for false teeth, the avoidance of a loaded stomach, and careful watching of the respiration throughout the whole operation, the administration of ether with Clover's apparatus becomes as safe as it is speedy and effective.

When I pass on to speak of the cone, however, I cannot say so much. No doubt it is not easy to do a patient harm with it. Such a large amount of air is introduced with the anaesthetic that it is probably the safer instrument for beginners, or for those who prefer to superintend the operation rather than attend to the anaesthetic. But it has some disadvantages. A large quantity of ether must be used. The vapour is diffused all over the house, and powerfully odorises the person and garments of the anaesthetist. Ether given in this way is very nauseous and disagreeable to the patient. Unless much time be occupied, the cone must gradually brought to the face, and the strength of the vapour increased by degrees, struggling is apt to ensue. Given a nervous and muscular patient, an inexperienced anaesthetist armed with a bottle of methylated ether and a felt cone, and an impatient operator, and you have all the elements of a proceeding which usually terminates in a hand-to-hand struggle. I know of nothing which is so disagreeable (not to use a stronger term) than the sight of a patient held down by a number of assistants whilst he is asphyxiated after this method.

Speaking generally, I like to use the cone in very long operations when a due supply of air is very essential. When I have had occasion to employ it I invariably prefer to commence anaesthesia with the A.C.E. mixture, or chloroform and alcohol. The ether is gradually added, and as insensibility supervenes, entirely takes the place of the more palatable anaesthetic. This plan is peculiarly suitable for children, who will often hold the

cone over their own faces if the anæsthetist gains their confidence by kindness of manner.

The amount of ether used is small if Clover's apparatus be employed, so small indeed as to be readily carried any distance. Hence one of the objections raised by many practitioners in the country to the employment of ether falls to the ground. It may seem hardly needful to point out that temperature greatly influences the rate of ether evaporation. On a frosty day it is a necessary part of the proceeding to immerse the metal part of the apparatus in hot water before pouring in the ether. For want of observation of this precaution I have known practitioners fail to produce satisfactory anæsthesia.

I do not propose to weary my audience with any minutiae of ether administration, with which they are likely enough familiar, but I would crave indulgence to briefly point out the principles by which one should be guided in administering this anæsthetic. When once the patient has commenced to quietly and gently inhale the vapour, having conquered the slight preliminary choking and coughing which often occurs, push the ether in gradually increasing quantities, not in irregular sudden doses of different strength. Muscular rigidity and blueness of the face are to be met by boldly pushing the vapour. When the breathing becomes stertorous, and flaccidity occurs, a few respirations of air will restore the natural colour to the face. Timidity in pushing the vapour at this period has done much to bring ether into discredit as an anæsthetic. When the patient is fully anæsthetised, aim at keeping up perfect unconsciousness with due supply of air. To do all this properly requires care and continued attention, especially when the administrator is exhausted and stupefied by having to give ether for many long operations in succession. When circumstances permit I hold it strongly advisable to examine each patient previous to the administration of an anæsthetic. How often this rule is obeyed in practice I leave my audience to answer from their own experience. A little time is surely well spent in briefly noting the condition of the main abdominal viscera, the heart, and the great vessels. In an operation for aneurism, for instance, a second aneurismal swelling may exist unsuspected within the thorax or abdomen. In the case of malignant disease, secondary growths may be located in the liver or mediastinal glands. The mouth should be inspected, and no questions asked as to the presence of

false teeth. Some lady patients are offended at this query, others are foolish enough to deny the impeachment. I have discovered in the mouth of a child about to inhale an anæsthetic a piece of sweetmeat; in the mouth of a man a hardened "quid" of tobacco. It is obvious that either of these substances might readily have gained access to the larynx. No food should be taken for at least three hours before the operation. The meal should consist of fluids, as milk, or an egg beaten with sherry. A more solid repast would certainly remain unaltered, owing to impairment of the digestive function by mental distress and anxiety. The operation must never be commenced, at least with the sanction of the narcotist, until the patient is properly under the influence of the anæsthetic. This rule, though simple, is too often transgressed in practice not to need repetition. After the operation has been concluded the patient must on no account be left until consciousness has fairly returned. If the administrator cannot attend to this himself, he should see that nurses and attendants do not neglect it. Too often the patient is placed in bed on his back, deeply unconscious, and the attendant, having tucked a towel under the chin, and placed a basin against the cheek, imagines that everything needful has been accomplished. There is really considerable risk at this period. The mouth may be filled by the vomiting of masses of undigested food, and in the semi-unconscious state of the patient a piece of meat or vegetable may readily be drawn into the larynx to his destruction.

I have stated my belief that ether is the preferable anæsthetic for most cases. Under certain circumstances I have departed from this rule, I believe to the advantage of the operator and patients. And here I would remark that the choice of an anæsthetic for any particular case is often a matter of no little difficulty and delicacy, and should not be conducted haphazard.

When ether has been considered inadmissible I have employed the A.C.E. combination, a mixture of chloroform and alcohol or pure chloroform, with very satisfactory results. These agents can be administered with a cone admitting due supply of air, or a piece of lint, or a handkerchief. I think the cone is preferable. Ether is a risky anæsthetic in cases of disease of the central arteries. Ether does not answer well in infants, young children, and the very aged.

Ether acts injuriously in cases of very advanced chronic bron-

chitis and emphysema, or in mitral disease with pulmonary œdema, congestion, and haemorrhagic effusions. I am not prepared to say why this may be, but am inclined to the idea that the pungent vapour acting upon the lining membrane of the tubes and small bronchi, greatly exaggerates the already serious congestion, and tends to load the smaller tubes with secretion. I have often felt sure that some of those deaths which occur in the bronchitic after operations in cold weather from so-called "hypo-static" pneumonia, have been largely due to the ether improperly used as the anæsthetic. In advanced phthisis and haemoptysis I have avoided ether for the same reasons.

If the respiration be seriously hampered, as in cases of pleural effusion, emphysema, large bronchocele, aneurism, false membrane, or foreign body in the air passages, should an anæsthetic be used at all, chloroform is to be employed. Ether in such instances causes severe dyspnoea, and proves dangerous.

In cases of injury to the cranium, when the surgeon has reason to believe that effusion of blood may be going on within the cranial cavity, ether is inadmissible. If any anæsthetic is administered in these instances, chloroform is preferable, and is the anæsthetic employed in cerebral surgery. In certain operations about the mouth, as for complete cleft palate, where the apparatus for giving ether would be much *in the way* of the operator, and the flow of mucus induced by the action of the vapour troublesome, the other anæsthetic may be administered by means of Junker's inhaler.

In some ophthalmic operations chloroform is preferable to ether on account of the venous congestion induced by the latter. Some operators prefer chloroform to ether when operating for ligature of a main artery, especially near the root of the neck, and where venous plexuses are large and intricate.

The above form a short summary of all the instances where I have ever thought it needful to depart from the administration of ether. It would be a matter of interest to know the opinion of anæsthetists present on the point of whether there be any cases in which, suppose an operation is performed, no anæsthetic should be administered. Every dangerous case must be judged on its own merits. I have refused to give anæsthetics in three instances. In the first, a patient in the last stage of cardiac dropsy suffered from a slough near the knee, which opened that articulation, and amputation was proposed. I declined to administer an anæsthetic, and

believe to this day that the patient's life was materially lengthened by my refusal. The second was a patient with advanced tubercular disease of the larynx and lungs, for whom tracheotomy was performed. He was in great terror of the anæsthetic, and I feared that any sudden aggravation of the existing dyspnœa might prove dangerous. The third case was that of secondary haemorrhage from a deep and sloughy wound under the jaw, which also communicated with the mouth. Here the carotid trunk was ligatured, and so profuse was the bleeding into the mouth that tracheotomy was performed although the patient was at the time conscious. Had he been under an anæsthetic I am convinced that the case would have been fatal.

But I say that all these debateable points are eminently those for discussion. Personally I have had recourse to chloroform or the A.C.E. mixture in most of the cases where ether has been considered inadmissible. I shall be gratified to hear the opinion of others regarding the advisability of employing these or other anæsthetics in similar instances.

I now pass on to shortly enumerate some groups of cases met with in surgical practice when in my judgment certain modifications are needful in the methods of giving anæsthetics, and in the quantities suitable for administration.

I would commence by drawing your attention to a class of cases, common in hospital practice, of shock and collapse, such as result from a railway accident or gunshot wound. Here, I believe, the majority of surgeons deem it advisable not to operate until by means of warmth to the body and head, combined with small doses of diffusible stimulants, the pulse be somewhat restored in vigour, and the patient rescued from impending death. As ether is being inhaled the pulse will frequently still further gain in strength. The quantity of ether needful to induce anæsthesia is very small, the patient remaining for some time under the influence. The operation should never be commenced until the patient is quite anæsthetised, and should be performed as speedily as possible.

At its conclusion, the administrator must judge whether it is advisable to employ the remedies indicated in profound collapse. Here I would especially recommend to your favourable notice, transfusion of blood as recommended by Duncan and Annandale, and draw attention to the fact that the remedies for collapse and

shock should be employed for some time. Too often the patient is moved away from the table, the anæsthetist congratulating himself on getting him alive from the scene of operation, when a little extra time spent in restoratives and the application of warmth might have made all the difference in the question of ultimate recovery. In any case of severe injury, if the patient can bear an operation at all, he is fit to inhale an anæsthetic.

*Cases of Obstruction of the Bowels, Hernia, or Internal Strangulation.*—In this class of cases more caution must be employed than in almost any others, especially when the case is advanced and the symptoms urgent. Too often these patients come under the care of the surgeon collapsed and sinking, with all the vital powers exhausted, with the tongue dry and brown, the belly tympanitic, the extremities cold, and the pulse hardly to be felt at the wrist. Such symptoms as these are but too common in the subjects of neglected strangulated hernia occurring among the ignorant poor of large towns. They pass under the influence of ether with surprising rapidity, a small quantity sufficing to produce and maintain anæsthesia. The respiration is shallow and slightly marked, and the administrator cannot be too diligent in watching the position of the tongue and the onset of vomiting. The latter complication is apt to occur in consequence of strangulation, while the patient is deeply unconscious, and the fæcal fluid pumping with a gush into the mouth may readily pass into the air passages.

*Cases of Abdominal Section as for Ovarian or Uterine Tumour.*—I am here quite aware of the great difference of opinion that exists as to the most suitable anæsthetic. Great authorities upon the subject of ovariotomy give the preference to other anæsthetic agents than ether. As I have always employed the latter anæsthetic in a very considerable number of cases, and have had every reason to be satisfied with it, I merely state the result of my experience and avoid dogmatism. If the tumour be of large size and the respiration embarrassed, or if the cyst be thin and perhaps rotten and easily lacerable, any anæsthetic which would cause muscular spasms or dyspnoea is in my opinion very unadvisable. I have, in such, always commenced anæsthesia with chloroform, or chloroform and alcohol, and throughout the operation have passed on to ether, the latter being gradually added by dropping it into the cone.

In a prolonged operation over-etherisation must be most care-

fully guarded against. On the other hand, the administrator must avoid the onset of vomiting which may seriously embarrass the operator.

Should the operation prove long and tedious, if the cyst be too quickly emptied, or violently dragged upon, if much blood be lost as by the spouting of an uncontrollable vessel, or the soft and hæmorrhagic state of the tumour, symptoms of profound collapse supervene, and render the position of the narcotist one of no ordinary anxiety.

To combat such symptoms which, I remark by the way, may suddenly arise in any operation for abdominal tumour, it is the duty of the anæsthetist to provide himself beforehand with all the possible appliances and remedies he may require. I have known ten precious minutes wasted in seeking for a suitable syringe, to inject ether hypodermically, or administer an enema. This ought not to occur.

Further, I think it highly important that the administrator do not add to the perplexities of the operators by constantly harassing them with alarming announcements of the condition of the patient. When the symptoms are grave, the operators should be quietly informed of the fact, and then they should be left to entirely attend to their duties, and the anæsthetist to his own. Interference of one with the duties of the other is prone to lead to confusion or disaster.

*Operations upon the Mouth or Jaws, attended with Hæmorrhage.*—Removal of the superior maxilla may be taken as a type of these operations, and I recommend ether as the anæsthetic. The plan I adopt for such has been as follows: The patient should be well placed under the influence before the operation is commenced. I usually request the operator to allow me to administer ether for at least fifteen minutes. The patient is then deeply narcotised, and the period of anæsthesia very prolonged. A handy operator can remove the jaw and introduce the sutures before the return of sensibility. Of four cases of removal of the jaw anæsthetised by myself after this method all declared they felt nothing of the operation but the introduction of the last sutures.

When the operation is commenced the head should be well thrown back, so that blood percolates to the pharynx. A strong gag is to be placed in the mouth, and the anæsthetist should by means of sponges securely held in forceps keep the larynx free from blood-

clot. No apparatus impedes the rapid execution of the operation, and as the anæsthetist has nothing to do but keep the fauces clear of blood, the great danger of asphyxia is avoided.

My objections to the administration of chloroform for operations on the jaws are as follows:—

1. These operations, especially when the base of the skull is implicated, are accompanied by severe shock.

2. In my experience, it is impossible *during the operation* to administer the chloroform with anything like regularity, the patient at one moment getting none, at another large quantities, of the vapour.

3. If the administrator is giving an anæsthetic at the time of the performance of the operation, he is much in the way of the operator, and cannot attend to two cardinal points, the sponging of the fauces from blood, and the general condition of the patient.

*Operations on the Tongue.*—In the majority of these cases I have administered ether. The patient being first deeply anæsthetised, the *preliminary* stages of the operation, passing a ligature through the tip of the tongue, division of the sublingual muscles, and if needful of the cheek, the passage of the écraseur round the tongue, are rapidly accomplished. Then during the section of the organ, a *large* felt cone, well charged with ether, will cover the entire mouth and nose, and maintain anæsthesia. In operations upon the tongue, which require prolonged manipulations about the mouth, I think ether is not advisable, but in the operation by the écraseur it acts admirably.

So far as I have seen, I cannot favour the sitting posture in operations about the mouth and jaws. The blood has a far more direct passage to the trachea, and fainting and collapse more readily supervene, but this is a point upon which I shall hope to hear comment.

*Ophthalmic Operations.*—It is comparatively seldom now-a-days to see an anæsthetic administered for operations upon the eye. The great objection to ether in these cases is the venous engorgement that occurs during the early stages of inhalation and insensibility. This is embarrassing to the operator, and favours interocular haemorrhage. Should ether be employed in operations upon the eye, I strongly recommend that deep anæsthesia should be produced before the operation is commenced. The apparatus is then quite removed from the face, allowing the operator free manipulation,

while the admittance of air causes disappearance of much of the venous turgescence.

I need not dwell upon the expedience of nitrous oxide gas as an anaesthetic in most dental operations. What anaesthetic had best be employed in those troublesome cases, when the patient is in a sitting position and many teeth have to be extracted at one sitting?

I certainly give the preference to ether. The administrator must not allow the patient to recover consciousness, otherwise vomiting and movements occur during the operation. This is often due to the pertinacity of the operator, who will not allow free access to the face on the part of the anaesthetist.

*Cases of Serious Cardiac Disease.*—Time will not permit me to discuss these in detail, but I would say generally that if an operation has to be performed at all upon these patients an anaesthetic should be administered. The condition of the lungs is a matter of anxious enquiry, and the presence or absence of fluid in the serous cavities.

The plan I have adopted in these cases is to commence anaesthesia with the A.C.E. mixture, *very gradually* administered in a cone admitting a free supply of air, then ether is slowly added in increasing quantities, so that the patient has none of the respiratory embarrassment occurring from the inhalation of pure ether-vapour at first. I may add that this method is in my estimation a good one to adopt in cases of serious illness, when a patient is very prostrate; in operative midwifery cases, and in the instance of anaesthetics being frequently required by the same patient, as the discovery of a hernia or severe operation wound, operations in the rectum and genitals, the anaesthesia must be very deep, far deeper than in most operations, on account of the exquisite sensibility of the parts involved. I believe ether to be the most advisable anaesthetic in these operations.

In cases of known disease of cerebral arteries, the question of selection of an anaesthetic is an important one.

In two cases where symptoms of transient haemorrhage into the brain, epistaxis, and sub-conjunctival bleeding had occurred, I administered chloroform, and I argue that this would be the right course to adopt under similar circumstances.

*Cases where Anæsthesia has to be prolonged for many hours.*—The leading instances here are those of digital or instrumental pressure for aneurism, or painful diseases as tetanus.

As a rule anæsthesia need not be very profound, and chloroform in small and judicious quantities is best employed.

The patient should be instructed to hold over his face a wire frame upon which lint or flannel is stretched, and the chloroform is to be dropped slowly on the inhaler. So soon as he begins to mutter dreamily and relax his hold of the cone the proper stage of anæsthesia has been reached, and the administrator need not go farther. I have kept a patient insensible to pain by this method for four hours, and doubtless this has been exceeded.

For short operations, as tooth extraction, incision of whitlow, the movement of a stiffened joint, in the excision of a small tumour, nitrous oxide gas is undoubtedly the best anæsthetic known. We must bear in mind the efficacy of local anæsthesia by cocaine in the ether spray in minor operations, and also reflect whether we are justified in exposing patients to even the minimum of risk that is encountered from the administration of gas for an amount of pain that is momentary and trivial.

I propose in the concluding part of this paper to lay before you some of the more serious complications I have encountered while employing anæsthetics, with a description of the treatment I should advise to be adopted under similar circumstances.

I have to relate one fatal case which occurred *under* the influence of ether, I must not say from the action of the anæsthetic itself.

A middle-aged woman underwent excision of the upper jaw on account of an exceedingly vascular tumour which occupied the antral cavity, and fungated into the mouth. The ether was administered with a Clover's inhaler, the patient being in a sitting position. She passed quite readily under the influence of the anæsthetic. Soon after the commencement of the operation great lividity of the features was noted, and the breathing gradually ceased. Artificial respiration and galvanism were persistently tried, and the operation quickly completed. No sign of returning respiration was at all evident. It was noted that the pulse went on beating after cessation of the respiration I should say for two minutes, though on occasions like these estimations of time are apt to be inaccurate. At the autopsy malignant growths were found in the mediastinum near the root of the lungs. The diaphragm on the right side was pushed up by a considerable tumour of the liver, of brain-like consistence, so that the thoracic cavity was much encroached upon and diminished. A little blood was found

in the trachea and bronchi, but not in such amount as to account for death. Some of you are saying that these conditions ought to have been previously detected. It is easy to speak after the event! This case offers a strong example of the importance of examining the visceral condition of patients prior to administration of anæsthetics when they are the subject of malignant growths, which may possibly be disseminated.

In connection with this case I may mention another when the symptoms, though sufficiently alarming, had a more fortunate termination. The femoral artery was being ligatured for a large popliteal aneurism in the person of a strong and well-developed gentleman of colour who had come to this country from the West Indies on purpose to undergo the operation. There was nothing in the condition of the heart and great vessels to indicate disease. Clover's apparatus was used charged with the best ether freshly procured. He passed under the influence easily and quickly. The operation was commenced, and just as the needle was being passed round the artery the patient's respiration became shallow, infrequent, and gasping. He gave a long-drawn inspiration and expiration, and ceased to breathe. The operation was discontinued, the tongue drawn forward, and artificial respiration employed. In a period of time which seemed very long to us who were engaged, a few grunting sounds indicated the return of respiration, which was ultimately restored. The pulse remained good throughout, and the operation was successfully completed.

In this case I do not know that I could have exercised more care or caution in administration of the anæsthetic. The day was hot and the ether vapour powerfully diffused. Bearing in mind the dark colour of the patient's complexion, I was careful in removing the apparatus frequently, so that a due supply of air was admitted. It may have been, however, that a degree of cyanosis was produced of which I was not cognizant, owing to the dark colour of the patient's complexion, and hence that he was over-etherised, at least this is the only explanation I can offer. These two cases are the only instances where it has ever occurred to me to witness complete failure of the respiration under ether, or indeed to have recourse to artificial respiration. Seeing the large number of cases which in the aggregate have come under my hands speaks perhaps of my good fortune, but also for the safety of the anæsthetic.

Temporary embarrassments of breathing, often due to flapping backwards of the lips in the aged, have always been relieved by drawing out the tongue, admitting free access of air, and loosing all constricting structures round the neck and chest. I strongly advise *pulling out* the tongue with appropriate forceps, and here must emphatically dissent from the opinion of those who assert that raising the chin will do equally well.

I have experienced serious cases of collapse under anæsthetics. The administrator must carefully discriminate between the collapse due to the anæsthetic and that due to the operation. It is perhaps a pardonable weakness in operators to blame the anæsthetic for collapse due to shock or hæmorrhage, for which they themselves are responsible. I feel sure that one cannot always prognosticate when these symptoms will arise. Having noted the pulse in many cases of amputation and in some of castration, I can certainly negative the statement that a marked failure in its strength occurs at the moment of sawing through the bone in the former, or dividing the cord in the latter operative proceeding. The most marked cases of unsuspected collapse I have experienced have been in instances where large areas of sympathetic nerves are dragged upon, as in operations on the pelvic viscera, or in cases of colotomy where there is a sudden gush of faeces from the hyperdistended bowel. The symptoms of collapse are also marked in young children, when they are subjected to operations of a severity which their nervous organisation seems incapable of resisting. I think I may say as a general rule that the collapse induced by operation is rarely *immediately fatal*, but is highly prejudicial to *ultimate recovery*, whereas the collapse induced by the anæsthetic as chloroform is often attended by immediate risk to life, and if recovery ensues no bad after-effect need be anticipated. The importance of this distinction in practice cannot be over-estimated. I look with little alarm upon the collapse induced by operation, knowing that I can by judicious restorative measures, as the application of warmth to the head and praecordial region with injection of ether or alcohol, save the patient from impending death. But the sudden collapse of chloroform, and I say chloroform because I have never experienced such symptoms from ether, must be regarded with too good reason as most dangerous.

It is well known that the inflammable nature of ether vapour forbids its employment in cases where flame-light or white hot

cautery is to be brought into close contact with the anæsthetic. This is a precaution which it is well to religiously respect in country practice, where a lamp or bunch of lighted candles may be incautiously brought near to the patient.

If the actual cautery is to be used about the face, it should be only at a black heat, which suffices for the purpose of destroying a growth or arresting bleeding. I have seen severe burning of the skin of the face accompany the application of the cautery at a white heat to nævoid or lupoid tissue, the ether which had been shed on the neighbouring skin becoming ignited. I once experienced a very serious accident from the ignition of ether vapour. During an operation for cataract on a dark winter's afternoon, a small lamp was brought near the patient's face. The man being well under ether gave a prolonged expiration, and blowing the vapour towards the light, ignition of the former at once occurred. The face and neck of the patient with the apparatus and sleeves of the anæsthetist were enveloped in flame, and had it not been for the expedition of the ophthalmic surgeon who was operating, most serious consequences might have ensued. Beyond some superficial burns the patient experienced no harm. He was greatly impressed with the potent after-effects of the anæsthetic.

It is not unusual for nervous and excitable individuals, particularly when alcoholic, to evince excitement and struggling as they are passing under the influence of ether. For such, the preliminary inhalation of nitrous oxide gas is very admirable. I have met with two cases where the struggling and excitement was so great, that to it the term "ether mania" might properly be applied. One occurred in a muscular and alcoholic Cambridge undergraduate, the other in a young stout labourer. The ether was inhaled quietly and easily for a few moments, and just as insensibility might be judged to be supervening, the patients suddenly and without warning commenced to struggle violently and uncontrollably, dashing themselves about the room and against the furniture, and only prevented from doing themselves severe injury by timely assistance. In both cases the violence and struggling occurred for some time after complete consciousness had returned.

It is not wise I believe in these instances to persist in administering the anæsthetic. The operation had better be postponed, and a preliminary anæsthetic as gas or the A.C.E. mixture adminis-

tered. I am not an advocate for the employment of brute force in the administration of ether.

Hypersecretion of mucus is troublesome in some patients. I think it is best left alone, as sponging the fauces only tends to aggravate the flow. By keeping the head on one side and allowing the mucus to collect in the hollow of the check, much of this difficulty may be overcome.

The after-effects of ether are always disagreeable, but rarely serious. Severe vomiting is sometimes met with, especially after operations where the pelvic or abdominal sympathetic has been much disturbed. It is impossible to foretell whether or no vomiting will certainly occur, still less whether it will prove troublesome. I incline to the belief that the two main causes of troublesome vomiting after ether are the employment of an impure preparation of this agent, and over-etherisation of the patient.

The subcutaneous injection of morphia has seemed beneficial in some cases, and I have seen much relief to the distressing sensations of pain and emptiness at the epigastrium, caused by the administration of a few drachms of strong black coffee, with ten drops of laudanum and a drop of oil of cajeput suspended in it. Of the dangers attending the entrance of foreign bodies into the air passages I have had no personal experience. I have witnessed this distressing accident in the practice of others, and most careful precautions before the operation, and during its performance, should be observed and exercised in order to obviate the possibility of its occurrence.

It is to be hoped that what is said in this communication will be an additional testimony to the safety, efficacy, and general adaptability of ether as an anaesthetic, not only in London but in the routine of provincial practice. It will also be apparent that as with all anaesthetics, great care and watchfulness are needful, if the administration is to be in *all senses* satisfactory. I trust to have made it clear that the selection of an anaesthetic is a matter which is often of no small moment, and should in my humble opinion be sometimes a matter of consultation between the operator and anaesthetist.

I candidly confess that I never approach the subject of the selection or administration of an anaesthetic with that feeling of absolute indifference which is commonly begotten by ignorance, and which regards the whole matter as easy and trivial. I think

it very desirable that the operating theatre of hospitals should be fitted with all appliances to restore a collapsed or asphyxiated patient. In a private case the anæsthetist should furnish himself with the more important remedies indicated.

I may express surprise that considering the great practical importance of the subject, no organised teaching is given in the theory and practice of anæsthetics to the great bulk of medical students. One, at least, of the metropolitan hospitals has made a step in this direction, and it is hoped ere long that this subject will form a part of the practical curriculum of every medical student.

I have occupied your time and patience sufficiently long. The difficulty of compressing such an extensive subject into a small compass without rendering it unintelligible on the one hand, and the fear of wearying an audience by the relation of unimportant details on the other, have rendered my task somewhat anxious and difficult. I would beg you to pardon the many omissions you may have observed, and to enlarge from your own knowledge and experience my confined views upon the many most important points I have brought before your notice.

Mr. CARTER said that all would admit that the basis underlying all modern progress in surgery was the power of inducing anæsthesia. It was imperative that surgeons should take stock of their knowledge of anaesthetics from time to time, and be prepared to defend their preference for any individual one of them. Ophthalmologists had been much relieved in this respect by cocaine: the risks of chloroform administration formerly weighed heavily on them, for there should be no deaths in ophthalmic surgery. He quoted a case of squint in a girl of 17; he himself gave the anæsthetic, and his assistant, Mr. McHardy, operated; a small quantity only was given and the patient came round; a little more was then administered in order that the operator might make a second cut, when the girl changed colour and her heart ceased to beat, and she never rallied despite all attempts at resuscitation. In the same week there were two other deaths from chloroform in ophthalmic practice, one being in the house of the operator. He was then inclined to discard chloroform altogether, but having found that ether failed to produce the necessary complete muscular quiescence, and had caused some disasters from struggling and venous engorgement, it was agreed that it could not be used as a substitute. Dr. Jeffreys in 1872, at the Congress of Ophthalmologists, in London, read a paper on the administration of ether, and concluded practically that the use of chloroform should be discontinued. He was next day invited to come to St. George's and administer ether for ophthalmic operations. The patients were rapidly brought into a condition of absolute muscular quiescence, and he did in one case a double cataract operation. He afterwards considered that the absence of struggling was due to the combined weight of some fifteen or eighteen

superincumbent Germans who pressed round the table, and effectually pinned the patient down, for afterwards they did not succeed so well. He would like to ask what statistics Mr. Sheild could give as to the comparative danger to life of ether and chloroform, for that was a point of comparison to which more than any other it was necessary to address ourselves.

Mr. BAILEY was glad to hear ether named as *the* anæsthetic. He thought that if more time and care were expended in studying how to administer it, it would be used in all operations. He was also glad to hear Clover's apparatus spoken of favourably, but it should be used in its simple form, having only an expiratory valve. By it a patient could be got fully under ether in five minutes. He heard of a case the other day where twenty minutes were taken to anæsthetise a patient to open a whitlow, and even then it was not fully induced. A common cause of this failure was that the ether used was not pure. He preferred to administer nitrous oxide first, for about fifteen seconds and then follow with ether. A little boldness was a very valuable quality in an administrator. He did not think it advisable to inject morphia beforehand. He had found that four parts of ether and one of chloroform made an admirable mixture which was perfectly satisfactory. Mr. Sheild said he sometimes gave A.C.E., or chloroform before the ether. He thought that a mistake, as almost all deaths from chloroform were at the beginning of the administration: they therefore usually die within the first minute. He advocated giving the anæsthetic first that stimulated. In mouth operations he first gave plenty of ether and then blew over chloroform. The surgeon could then use the cautery and the administrator was not in his way. In children he gave usually a whiff of gas followed by ether. In abdominal cases he gave ether and he did not think it produced more vomiting than chloroform. The only effectual way of giving chloroform was by Clover's apparatus so that the proportion of chloroform and air was definite. He advocated nitrous oxide for small operations such as removal of tonsils, opening abscesses, operating on squints, and occasionally iridectomy and enucleation. He thought it should be used much more extensively than it was.

Mr. CARTER wished to add that Mr. Victor Horsley first injected morphia and then administered chloroform in his operations on the brain.

Dr. F. W. HEWITT preferred to give nitrous oxide first whenever ether was advisable and then proceed gradually from one to the other. He had tried various ways of diluting chloroform vapour. He had given chloroform with alcohol-chloroform, alcohol and ether—and chloroform and ether. He had found that with four parts chloroform to one of alcohol it was absolutely impossible to anæsthetise a patient. Five parts chloroform and one alcohol made it more possible, whilst with seven chloroform to one alcohol a mixture was obtained which acted like chloroform, but was not so dangerous, and in mouth cases it was the best thing that could be used. With Junker's inhaler and a jet of vapour pumped over the mouth it was possible in harelip and cleft palate to keep the patient under without a tube. As to vomiting following anæsthetics, he thought we knew nothing concerning it. He considered the irritability of stomach which caused the vomiting was to a great extent dependent on the quantity of mucus swallowed. He had been trying the previous administration of cocaine in  $\frac{1}{2}$  to  $\frac{3}{4}$  grain doses to allay this gastric irritability. He was glad to hear Mr. Bailey condemn the previous use of morphia.

He knew that in cerebral cases it was the practice to give morphia before the operation, but he was of opinion it ought never to be given in cases of respiratory failure. He once saw a case in which an aneurism was pressing on the trachea, before administration of the anæsthetic  $\frac{3}{4}$  grain morphia was given, and he thought this had much to do with the death of the patient, which occurred under chloroform.

Mr. SHEILD in reply said that the remarks of the Fellows were more in the direction of commendation and agreement than criticism and addition of knowledge. He thought the comparative danger of ether and chloroform could not be well represented by statistics. Deaths recorded as due to anæsthetics often in reality happened from other causes. The danger of chloroform as compared with ether was, he thought, very great. He was glad to hear from Mr. Bailey that Clover's apparatus was the best. He, himself, was not sure of the value of the expiratory valve, as he thought that at first the carbonic acid was valuable in inducing a semi-asphyxiated condition. Over etherisation was the danger later on. He objected to the preliminary exhibition of morphia because we could never be sure of the action of that alkaloid on some sensitive constitutions. After an operation no doubt it was often highly beneficial. He had found the preliminary stage of ether administration disagreeable to children. He had never given them gas, but had no doubt that with a small mouth-piece that could be easily done. Mr. Bailey recommended chloroform after ether in mouth operations. If he objected to that, it would be because he considered it unsafe to give chloroform to a patient who was already somewhat collapsed. Nitrous oxide ought to be much more largely used than it was for sebaceous cysts, fatty tumours, &c. He would have liked to hear what length of time the administration of  $N_2O$  could be kept up in the operations of surgery. He thought it would be risky in long operations (Mr. Bailey said he had given it for forty minutes). He agreed with Dr. Hewitt that nitrous oxide should be administered before ether when the administrator had experience; but the apparatus was somewhat cumbersome. He would have liked to hear more about the mixtures and the possibility of getting rid of the dangers of chloroform by dilution. He doubted whether ether or alcohol would do away with the danger of chloroform: they evaporated at different rates, and deaths had occurred with A.C.E. and chloroform and ether mixtures. He had never used the vapour-pump but would try it. He objected to giving chloroform in mouth operations because of the necessary irregularity in its administration.

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*December 20th, 1886.*

## CONGENITAL ENLARGEMENT OF LEG AND THIGH.

By WILLIAM C. BULL, F.R.C.S.

A BOY, aged 12, was shown to the Society with considerable enlargement of the left leg and thigh. There was an entire absence of history, and the condition had only been noticed for five months.

The case is different from those of asymmetry. There was no appreciable change in temperature or colour of the limb; the two legs were exactly equal in length, but the left calf was three-quarters of an inch more in circumference than the right, and the thigh was 3 inches greater in girth. No disease could be found in the pelvis, and the arterial and venous channels seemed healthy. The skin and subcutaneous tissues were thickened, and on being picked up with the thumb and finger exactly resembled the conditions met with in myxœdema. No change was noted during the three months the lad was under observation.

Mr. BULL considered the condition to be congenital, and thought it was probably due to a hypertrophy of the connective tissue of the limb; possibly, however, obstruction of the lymphatics might play some part in causing the swelling.

Mr. CARTER asked whether there were any difference in temperature between the two legs?

Mr. SHEILD inquired if any difference had been noted in the length of the two thighs. The left femur appeared to him to be longer than the right. He considered it a congenital condition, which had been overlooked in infancy and childhood.

Dr. BLACK said that in examination of candidates for admission into the Army, it had been frequently noted that one leg was longer than the other, and the increase was usually in the femur. No disease existed in this bone to account for it.

Dr. ANGEL MONEY asked whether the blood had been examined for filaria?

Mr. MORGAN said there was no difference in the length of the bones. He agreed with Mr. Sheild that it was congenital. It did not extend beyond the ankle-joint, and that was in favour of its congenital origin, for in lymphangiectasis there was usually swelling of the foot.

Mr. NOBLE SMITH: Had the limb increased in size while under observation?

Mr. BULL, in reply: There was no difference in the temperature of the two limbs, nor was there any alteration in length. The mother, who was a very observant woman and had washed the child once a week, did not notice any difference till the boy was twelve years old. No change had been noticed in it during the last three months. He agreed that if it were not a case of lymphatic dilatation, it was one of simple hypertrophy of the soft tissues of the limb.

## CASE OF CHRONIC HYPERTROPHIC CERVICAL PACHYMEMINGITIS.

By WILLIAM M. ORD, M.D.

THE notes of this case, as taken by Dr. Ritchie, my House Physician, are given in full, the changes occurring in the symptoms rendering such detail necessary.

James Smith, aged 26, footman, admitted May 21st, 1886, to George Ward, St. Thomas's Hospital, under Dr. Ord.

*Family History.*--Father and mother alive and well, six brothers, two sisters all well and strong, according to father's account, but doctor says strumous.

*Previous History.*--None of illness, except some childish complaints.

*Present Illness.*--Patient was well up to Christmas Eve, 1885, when he went home from London to Egham. In the morning he was seized, on walking, with pain and stiffness in the neck, sickness, and constipation. The doctor's account is as follows:--On December 25, 1885, James Smith came under my care, complaining of stiff neck, sickness, constipation, and with temperature  $103^{\circ}$ ; pulse 95; vomiting, bilious. He said he had a shivering fit for one day. He was quite coherent and sensible. He gradually improved till January 5th or 6th, when fever again came on. Temperature  $103^{\circ}$ ; quinine given.

January 7th. Temperature  $101^{\circ}$ ; pulse 72.

January 12th. Warburgh's tincture substituted till 17th without good effect. His mother now observed that he had had a cold fit for the last few mornings, and that he sweated in the evening about 8 P.M. and on into the night. Quinine given in 10-gram doses. On the 23rd temperature was normal, and the shivering for the last few days had been postponed, coming on at intervals of 30, 38, and 44 hours instead of 24.

January 26th. Temperature normal at usual hours of visit, but coldness came on again in the afternoon and at eight in the evening. He sweated profusely and was delirious. Delirium all night and next day till 3. Pulse 110--130, and great weakness. (He developed a bed-sore, which healed again.)

January 31st. Delirium again occurred on 2nd, 4th, and 7th of February with insomnia and restlessness between the attacks.

After this there was no delirium, but he was very weak for ten days, when he rapidly gained strength. He then went to a convalescent home at Bournemouth, where he remained six weeks, till May 4th. Four or five days before leaving he woke in the morning with stiff neck and pains between the shoulders. The doctor said it was rheumatism. The pain got no better, but on the whole got worse, and three days after he noticed his arm had got weak. This weakness has gone on increasing, and is now well marked with dropped wrist. He had difficulty in lifting his arm especially. About a week before admission he noticed his legs also getting weak. He has also had jerking in his leg since May 3rd, which may be seen now at intervals. The right side seems more affected than the left.

*State on Admission May 21st.*—An intelligent, well-nourished man complaining of loss of power and sensation in the arms, and inability to walk from weakness of the legs. *Thoracic and abdominal viscera:* normal, except that the lower edge of the spleen can be felt on deep inspiration. Area of dulness is not enlarged. There is great loss of power in the shoulders, arms, and hands, and marked wasting of the muscles. Sensation is much affected, but not completely lost in the parts supplied by the brachial plexuses. Above these sensation is not impaired. It is slightly impaired over the back and abdomen, and upper part of the thighs; elsewhere it is perfect. The two arms are about equally affected. There is distinct loss of power in the legs, but no obvious wasting, so that he cannot walk without assistance, and cannot resist moderate flexion or extension of either knee. The superficial reflexes (plantar, cremasteric, abdominal, and gluteal), with the exception of the interscapular, which could not be obtained, are all present and rather brisk. The plantar reflex of the right leg is exaggerated.

The patellar reflexes are exaggerated. There is ankle clonus in the right leg, and to a less extent in the left. No knee clonus. There is some rigidity of both knees. He has very slight affection of the sphincters of the bladder, being less able to hold his water than he used to be. The deep reflexes of the arms appear to be exaggerated on the extensor side. The biceps reflexes could not be obtained. The muscles themselves contract abnormally when tapped, and a greater movement is obtained by tapping the biceps than by tapping the triceps tendon.

There is no affection of the muscles of the eyes, or of the special senses. There is no tenderness or deformity of the spine. There are no scars on the body, or traces of syphilis, congenital or acquired.

The elbows are flexed, the fore-arms are pronated, the wrists are dropped, the last two rows of phalanges are flexed, and the thumbs lie close to the fingers.

There is marked atrophy of the skin of the finger, affecting chiefly the terminal phalanges. The joints can be flexed, but not quite extended. There is marked wasting of the interossei, and of the muscles of the thumb. The degree of wasting of the other muscles, as judged of by the loss of power and diminution in size is indicated by the following order:—

		Electrical reactions.			
About equally affected.	<i>R. arm—</i>				
	Pectoralis major				
	Deltoid .... .... .... .... ....	1450	—	2250	+
	Triceps .... .... .... .... ....	1125	—	1500	+
	Extensors of wrist and fingers .... ....	1100	—		+
	Supinator longus				
Equally	Serratus magnus				
	The Biceps appears less affected	325	—	2125	
	Flexors .... .... .... .... ....	600	—	1200	+
	<i>L. arm—</i>				
	Deltoid .... .... .... .... ....	900	—	1000	+
	Triceps .... .... .... .... ....	1300	—	1750	+
	Serratus magnus	{ Extensors	1250	—	1625
	Muscles of forearm				
	Biceps less affected .... .... ....	850	—	925	+
		1000	—		+

There is greater power in the left than in the right arm. He can

touch the tips of all the fingers of the left hand, except the little finger, and can separate the index from the other fingers, and bring it back.

The thumb can only be opposed, flexed, and extended. He can extend the fingers of the left hand, and can raise the hand to the line of the fore-arm, and he can pronate and supinate the fore-arm but very feebly.

With the elbow supported he can raise 3 lbs. in his hand with left biceps,  $2\frac{1}{2}$  lbs. with right. The fore-arms cannot be extended when they are flexed ; the left arm can, the right arm cannot be brought across the chest by the pectoralis. The arms cannot be held out at right angles with the body.

When the shoulders are brought together the angles project. He can separate and approximate the shoulder-blades. He is unable to sit up unsupported. He can stand alone, with his legs apart and eyes shut.

He walks with his legs apart, and the feet are dragged along the ground ; his pace becomes more accelerated as he proceeds, and he would fall if not held up.

There are no tremors or fibrillar movements. Pupils equal ; act to light and accommodation. Fundi normal ; no colour blindness. Hearing, taste, smell, normal. The reflex excitability seems to be impaired.

Tongue protruded straight.

Urine, 1015, acid, no albumen, no sugar.

May 24th. Urine, 1030, acid, no albumen, no pus, mucus.

May 27th. Urine, 1025, acid, no albumen, hedgehog uric acid, oxalates, pus. Blood examined and found quite normal ; galvanism applied to arms, forty cells to thumb and little fingers, twenty-five to fore-arm and upper arm.

May 28th. Forty cells thumb and little fingers, twenty-five fore-arm, fifteen to twenty upper arm, pectoralis ten to fifteen.

June 3rd. The patient is able this morning to feel pin pricks on both arms, and to localise them very fairly. Sensation is not, however, perfect yet, and there appears to be little local points of anaesthesia.

June 4th. Patient raised his left hand to his head this morning for the first time, and was able to extend his fingers once. Urine, 1013, acid, no albumen, stellar and triple phosphates (also seen before). He cannot distinguish two pin pricks, when applied *simultaneously*, even when at a distance of 3 inches or 4 inches apart, but can, if applied in rapid succession. He cannot distinguish the touch of a pin point from that of a finger, saying they both feel alike.

June 4th. Motion of fingers of left hand slightly improved, sensation about the same.

June 8th. Patient yesterday complained of pain in the side of the neck on both sides, shooting down on the left into the clavicular and scapular regions. He also noticed that his arms are extended involuntarily at the same time that his legs are flexed, which has happened more than once. Sensation remains the same, no return of motion. Urine, 1022, neutral, triple and amorphous phosphates.

June 11th. Measurements of arms : wrist,  $6\frac{1}{4}$  inches, right and left ; middle of forearm, 7 inches ; upper arm, 8 inches. When asked to move his hands he regards them very intently, but is unable to move them more than to a very slight extent ; he can throw them back with a jerk sometimes.

June 18th. Some improvement of sensation, he can distinguish more or less between a finger and a pin.

June 21st. Urine, 1020, acid, no albumen, abundant triple and

amorphous phosphates, and some stellar. Patient has had much diarrhoea, after house mixture, which still continues.

June 23rd. Diarrhoea better. The skin of the fingers is much cracked. There appears to be a tendency to constriction in the fingers of the left hand, which are more rigid than they were, otherwise about the same.

June 28th. There seems to be some slight improvement of motion, he can get his hands up to his head now with a good deal of difficulty.

July 3rd. He is able to throw both hands about with a certain amount of vigour, but he cannot move his fingers at all yet. He cannot extend the arms. Sensation improves somewhat, but is still imperfect, especially in the fingers, he cannot feel very light touches. Once he referred a touch on the wrist to the ribs.

July 4th. Urine, 1024, alkali phosphates, triple, amorphous in large quantities, bacilli. Patient has had a sort of burning sensation in the penis and bladder, since yesterday afternoon.

July 5th. Urine, 1025, acid, stellar phosphates; no more pain in penis or bladder.

July 6th. Patient complains of a sharp pain at times in the right shoulder, similar to those he had in the left.

July 8th. He complains of a dull pain like a bar across the abdomen, and of some pain in both shoulders and arms.

July 14th. The abdominal pain disappeared the following day. There is very distinct rigidity of the arms, especially in the right, best marked on extending the arm fully, which causes pain both at the elbow and shoulder, otherwise movement is improved; sensation remains much the same, he still confuses pin and finger-touch on the hands.

August 6th. Patient continues much the same from day to day. If anything there is slight increase of power in the arms. He is beginning to suffer from retention of urine. There is no pain in arms.

August 9th. Patient seems to feel the action of the battery better than he used to. He can also sit up a little better.

August 12th. Urine, 1008, acid, no albumen or sugar.

August 15th. There is decided improvement in the power of the arms since July 30th. He can move the left fairly freely and the right a little. He cannot move the fingers at all in either hand. Sensation somewhat improved, he is generally correct in his answers as to whether it is a pin or a finger which touches him, but he does not feel very light touches, especially on the back of the right hand. Above the hands sensation is good. The stiffness of the joints has, if anything, somewhat diminished, and there is no pain on movement. He has once had pains in his neck, but not nearly so severe.

August 19th. Ung. hydrarg. oleatm. to be rubbed into cervical spine every morning for fifteen minutes.

August 20th. The patient can move the index and second finger of his left hand slightly, and the movement of the right arm is better.

August 25th. Had some pain between the shoulders in the night, lasting two or three hours. Thinks the rubbing has done him good.

September 3rd. His power continues to improve steadily, he has been able for some days to sit up in bed, and can hold his head up a little, which he was totally unable to do. Complete extension of the second and third fingers in the right hand gives him considerable pain, the joints seem to be somewhat affected, his arms move more easily at all the joints. Rubbing to be done twice daily.

September 7th. Since September 5th rubbing has been done in axillæ instead of at the back of neck, owing to its being sore. He can stand with a little assistance, and can move his legs.

September 8th. Anaesthesia remains about the same ; he cannot feel very light pricks on either hand ; it is better in the palms than on the fingers. The axillæ are sore from the rubbing, and covered with a raised pimply eruption, especially the left.

September 19th. Patellar reflex brisk on left, exaggerated on right, knee and ankle clonus well marked, especially on the right.

September 23rd. Patient can now flex all the fingers of the left hand on the palm, and can perform all the ordinary movements with the hand and arm, though feebly. In the right hand he can only move the fingers very slightly, and all movements are extremely feeble. Sensation is still deficient over the lower half of the fore-arm and hand on both sides, especially the right, and chiefly on the dorsal surfaces. Triceps tendon reflex very much exaggerated on both sides ; biceps present on right, absent on left ; tapping flexor tendons causes contractions on both sides.

October 9th. Patient feeling much better. The last two days has had pains on and off in the left side of the neck and left shoulder.

October 11th. Had transient pains in similar position on waking yesterday and this morning. Urine, 1020, acid, no albumen. Bowels congested (two days).

October 18th. Patient much better. Urine, 1022, no albumen, no sugar.

October 20th. Patient left fore-arm and hand much colder than right. Pulse 98, weak. Temperature subnormal. On trying him with pin pricking sensation is much improved, especially on the palms.

October 21st. Urine, 1025, acid, no albumen ; left hand still colder. Patient was up yesterday, and walked about a little with assistance.

October 25th. Patient gets up now regularly, and finds his sleep at night much improved. On the whole he feels more cheerful and better.

November 4th. Patient has a sort of fainting fit the day before yesterday in the morning, lasting about ten minutes, and felt queer the rest of the day ; the attack being followed by pain on either side of the neck. Not so much difference now in the temperature between right and left hand, both of which are not so painful as formerly on extension. Urine, 1025, acid, no albumen.

November 15th. Patient is feeling all right again. Sensation in the fore-arms and hands is improved, though he thinks the latter to be a bit "numbed." Urine, 1025, acid, no albumen. Temperature on an average still subnormal.

November 18th. Left hand much colder again.

November 20th. About 11 P.M. last night felt giddy, and had difficulty in breathing ; heart palpitates and beats quickly ; face becomes white, and he has pains in the arms running down to elbows, this lasts about ten minutes.

November 29th. There is a good deal of prominence of first and second dorsal vertebræ, the seventh cervical is perhaps less prominent than normal, considerable curvature of spine in this region, marked wasting of deltoids, all muscles of arms and hands, trapezius, supra- and infra-supinatory rhomboids, pectorales, not of subscapularis, still patient can raise his arms above his head, reflexes (deep) exaggerated numbness of fingers ; hand has the appearance of that of progressive muscular atrophy, pupils dilated equal, diaphragm acting now well. Legs : Wasting of muscles not so

marked as of arms, great increase of deep reflexes, marked ankle clonus, no anaesthesia, superficial reflexes present, slight rigidity, organs nothing abnormal, eyes fundi normal.

During the period which has elapsed since his admission on May 21st, the changes which have been observed in the patient's condition, may be summarised as follows:—

Sensation has returned almost completely in the upper extremities.

He has had from time to time sharp attacks of pain along the inner side of the arm and fore-arm, but these have not lasted long, nor have they formed a prominent feature in his illness.

Muscular power has returned to a considerable extent, so that whereas he was unable to raise his hand from the bed, he can now, though with some difficulty, raise it over his head. He has also recovered to some extent the power of supinating the hand.

The form of the hands has changed considerably. Whereas at first the wrist dropped when the arm was raised by the observer from the bed, just as it would drop in lead palsy (no other deformity being observable), the hand can now be extended, and presents a deformity of the kind observed in progressive muscular atrophy. It is, in fact, a very fair specimen of the "main en griffe."

The nutrition of the biceps and of the anterior part of the biceps has improved.

The nutrition of the skin has been progressively impaired, and the same remark applies to the condition of all the tissues in the fingers.

At the time of his admission the joints were entirely natural in all respects.

The joints of the fingers, particularly the metacarpo-phalangeal joints have, since his admission, gradually become considerably enlarged, and now present, very decidedly, the appearance of chronic osteo-arthritis.

Of late new and serious symptoms have appeared. He has had from time to time attacks of dyspnoea, dependent upon spasmodic contraction of the diaphragm, leading to the inference that the phrenic nerve has become involved by the disease.

In the lower extremities the signs of descending lateral sclerosis have become much intensified.

His mind has remained at all times entirely clear, and his bodily functions have been undisturbed.

*Review.*—The case seems to me to be undoubtedly one of chronic hypertrophic cervical pachymeningitis.

It will be observed that it began with an acute illness, the symptoms of which pointed, in the main, to the occurrence of sharp meningitis around the cervical portion of the cord.

As regards the causation of this illness we have no positive evidence. There is no story of chill, or injury, or of syphilis.

The occurrence of severe cerebral symptoms has led to the consideration of the possibility that the original attack may have

been one of acute cerebro-spinal meningitis. This is, of course, an affection in which the pia mater is essentially concerned; and it is not easy to see how a general affection of the pia mater could give rise to a local affection of the dura mater.

The early symptoms suggested to those who were watching the patient at the time the idea of ague; but there is no history of malaria, and, so far as I know, malaria has no tendency to produce the condition now observed.

As regards the distribution of the affection in the dura mater, it is evident that the mischief was most intense in the lower part of the cervical region of the cord. The early and marked affection of the interossei, and the complete anaesthesia of the hand and lower part of the fore-arm, plainly prove this. And the immunity of the biceps and of the anterior part of the deltoid indicate that the upper part of the cervical cord has been much less affected. I am much indebted in this aspect of the case to Dr. Beevor's table of distribution of the fibres of the cervical nerves.

The causation of the illness remains therefore, so far as I can see, unexplained.

At present the patient shows in certain respects decided improvement. There is return of sensation, and a partial return of muscular power in the arms, and his general health has improved.

On the other hand, we have some ugly indications of pressure on the phrenic nerve.

The appearance of the signs of chronic osteo-arthritis in the joints of the hands and fingers, taken with the increasing signs of the wasting of the skin and other tissues of the fingers, are to me especially interesting. Nobody can I think doubt that the primary illness depended upon affection of the dura mater of the cervical cord. During the establishment and permanence of this affection we see, in a patient with no rheumatic history, the joints slowly developing the conditions of osteo-arthritis, at the same time that the muscles and the skin were wasting.

For some years, as may be known to the Society, I have been arguing that many cases of osteo-arthritis, some progressive, some paroxysmal, are brought about by the influence of the spinal cord. Here we have a case of localised affection of the spinal cord and its membranes in which a progressive osteo-arthritis occurs, after the affection of the cord has been well established, in association

with other dystrophic lesions recognised to be produced by disease of the spinal cord.

It is right that I should say a few words about treatment adopted. Iodide of potassium with perchloride of mercury were administered from the first, and mercurial ointment has been applied over the cervical vertebræ. Slight salivation has been effected, and apparently under this influence the patient has improved.

The back has also been sponged with hot water, and a constant galvanic current has been passed from the nape of the neck to the hands.

Mr. CARTER said that Fellows should be much indebted to Dr. Ord for his valuable communication. This case showed the value of carefully examining early symptoms. Many years ago he translated Hirsch's 'Report on Cerebro-spinal Meningitis' sent from the Austrian to the English Foreign Office. In it would be found a detailed account of the symptoms and post-mortem appearances of that malady. Was an ophthalmoscopic examination made in this case, and was the vision affected? For diseases of the spinal cord in the region of the cervical enlargement often led to lesions of the visual apparatus.

Dr. C. E. BEEVOR referred to the observations of Ferrier and Yeo published five years ago. They gave lists of the muscles supplied by each segment of the cord; the results being arrived at by stimulation of the anterior nerve-roots. He himself lately, while working with Mr. Horsley, had arrived at similar conclusions. His method was to divide the anterior nerve-roots, and note the resulting paralysis. Division of the first dorsal nerve-root caused paralysis of the interossei; division of the 7th and 8th cervical, paralysis of latissimus dorsi and pectoralis major. Division higher up was followed by paralysis of biceps and supinator longus. The above results would show that in the present instance the course of the disease was from below upwards. In progressive muscular atrophy the interossei were affected first, then the triceps and deltoid, then the supinator longus, whilst the biceps escaped. Ferrier had found that the centre for the dilator iridis was in the cord opposite the first and second dorsal vertebræ, and therefore in this case the pupil ought to be contracted.

Dr. ANGEL MONEY said that Dr. Hughlings Jackson had pointed out that in progressive muscular atrophy beginning in one side, the pupil of the same side did not dilate when the eye was shaded, proving paresis of the dilator pupillæ. In this case did the pupil dilate when the eye was shaded? Was the pulse regular? Drs. Gull and Ogle had observed a slow pulse of forty-eight per minute. Those observers considered the pain and weakness of the hands and legs to be due to a fatty condition of the heart.

Dr. ORD, in reply: There was no abnormality of discs. He agreed with Dr. Beevor that the mischief spread from below upwards, and the loss of sensation favoured this idea. The supinator longus had been affected, but was now better. The pupils were dilated, the left being larger than the right. Whilst the patient had been in the hospital he had seen no evidence of pulse abnormality.

## CASE OF LUPUS VULGARIS.

By T. COLCOTT Fox, M.B.

WILLIAM B.,  $9\frac{1}{2}$  years old, a rather fat boy with fair hair and blue eyes, the fourth child of a family of nine, eight of whom are living and, it is said, in good health, was brought to me at the Victoria Hospital for Children. His mother died in her confinement, and there is not a clue to any tubercular family history. He is the subject of mild ichthyosis, and is a ravenous eater.

W. B. had measles as an infant, and subsequently varicella. Some deep scars in the left flank and on the right arm are probably due to the latter disease.

In the autumn of 1885 an exuding eruption, probably eczema, appeared round the ears, but soon got well, and about the same time an eruption (lupus) came on the head and has gradually spread ever since. Shortly after Christmas, 1885, lupus commenced also on the right cheek, and spread.

The scalp at the present time is invaded by the lupus over a rounded area to the extent of the size of the hand. All the central part is scarred, white, polished, and denuded of hair, whilst the border is raised, violaceous red, crusted over, and forms a continuous rim of soft new growth without any indication of separate tubercles. The whole face almost is involved, including the eyebrows, above the eyelids, inside and out, the nose, lips, and the cheeks, extending below the commissures of the mouth towards the angle of the jaw, especially on the right side. This rounded area is purplish, more or less scarred in the central parts of the cheeks, and spreads by a raised, well-defined border, crusted over in places and broken up into several crescentic portions. There is no trace of separate tubercles. The eyelids are much distorted and the cornea scarred. The tip of the nose and septum are partially destroyed, and the growth extends well within the nostrils. The lower lip is everted, and on the right side the growth is somewhat fungating, and extends within the cheek. The gums are involved, the hard palate split widely down the centre, and the soft palate also divided and adherent to the posterior wall of the pharynx. The epiglottis is scarred and immobile, but there does not appear to be any active ulceration. The glottis is entirely in

shadow, and the interior of the larynx could not be explored. The boy talks in a hoarse whisper, and there is loud laryngeal breathing when asleep. The glands under the jaw are enlarged. There is a small crusted patch of lupus on the left flank. The case was brought forward to illustrate the affection of the larynx.

April 5th, 1887. No difficulty was experienced in curing the lupus on the scalp and cheeks by scraping and the application of chloride of zinc. Under chloroform the breathing was each time alarmingly embarrassed.

Dr. Orwin also showed a similar case.

Dr. FELIX SEMON did not think lupus of the larynx so excessively rare. Forty-one cases had been described. In Berlin the opinion of dermatologists was that if the larynx were examined in cases of lupus of the face it would be found more frequently. In a series of Austrian cases it was found in 5 per cent., and in a series of Norwegian cases 8 per cent. The whole brunt of the disease fell on the epiglottis usually, and it then descended into the larynx. There was one case recorded by Virchow and one by Ziemssen in which the disease went as low as the trachea. He had shown a case with Mr. Malcolm Morris at the Clinical Society where aphonia had lasted a year. It was under treatment for some time, and was cured. He saw the case a year after cessation of treatment, and found the cure was permanent.

Dr. LENNOX BROWNE agreed with Dr. Semon that lupus of larynx was commoner than had been supposed. In addition to the two cases Dr. Semon had quoted, two others of primary lupus of the throat had been recorded by Dr. Knight of Boston (in 'Archives of Laryngology,' vol. ii, p. 287). Out of twenty-seven cases he had examined there were changes in the throat in one-fourth. The changes were chiefly about the uvula and velum palate, not often extending beyond the epiglottis. In the present case, looking at the palate one would diagnose syphilis; at the larynx, syphilis; but the appearance of the nose and gums confuted this view, for there was found the contraction and cicatrisation of lupus and not the hyperplasia of syphilis. He thought that since dilatation had been begun the symptoms were no better. He considered this case a good illustration of the axiom that "one could never be certain of lupus of the larynx until one found lupus elsewhere." He thought that the cold night together with the instrumentation were sufficient to produce the stridor.

Dr. MORELL MACKENZIE said that Dr. Orwin had shown him his case four weeks ago, and he had then called attention to the slight stridor. He had only seen two cases. In the early stage one found either molluscum-like growths or destructive ulceration affecting the central portion of the epiglottis. Dr. Orwin's case did not agree with either type. At Copenhagen every case of lupus was examined. Out of 300 cases eleven were found by one observer and four by another, and this was near the figure quoted, namely,  $6\frac{1}{2}$  per cent., and he thought that this was about the proportion of cases which would be found exhibiting serious laryngeal disease. Would Dr. Semon state the treatment he had adopted? In his own cases the result had been unsatisfactory. Tracheotomy had been done in one case; it not only relieved the danger of asphyxia, but also had a curative

effect on the disease. Two cases of primary lupus of the larynx were on record, one by Hasden, the other by Ziemssen.

Dr. SEMON had treated his cases by several hundreds of applications of the galvano-cautery.

Dr. ORWIN, in reply, thought the dense cicatricial tissue showed that it was some years since there had been active ulceration. The fact that the lupus appeared four years ago on the face, whilst the voice was affected eleven years ago, pointed to the larynx as its primary seat.

## A CASE OF SYPHILIS OF THE TONGUE IN A CHILD.

By A. W. ORWIN, M.D.

A BOY 9 years old, admitted as an out-patient at the Central London Throat and Ear Hospital, February 13th, 1886. The child had snuffles a few days after birth; he was treated for this, and subsequently at several hospitals for rickets. About five years ago a medical man noticed some "cracks in the tongue;" eighteen months ago the patient lost his voice; six months after this the tongue began to swell and was very painful: this was about two months before he came under my care. On admission there was great swelling of the whole tongue; it was *most painful*; there was slight ulceration of the epiglottis and vocal cords; voice very hoarse; some slight scars at the angles of the mouth; teeth fairly good; no signs of previous eye trouble; he was put upon small doses of mercury and potassium iodide; after taking this for about a week the centre of dorsum of tongue began to soften, and in a few days more unhealthy, grumous-looking matter was discharged; there was a ragged deep fissure left extending for about an inch on the dorsum of the tongue; this was followed by another fissure on the left side at right angles to the first; these were both so deep that they appeared to nearly split the tongue down the centre and at the side. The solid nitrate of silver was applied freely several times a week, and it will be seen these fissures are healing up rapidly.

This, I think, is case of a gumma in the tongue, probably hereditary, though of course it may possibly be acquired. I believe this is not a common condition in children, and there do not seem to be many cases reported. There is a very interesting one by Dr. Barlow ('Path. Trans.', vol. 31, p. 101) in a child aged 6, but in this case there were well-marked other symptoms.

Mr. Butlin kindly saw this case with me a few days ago, and he considered it to be syphilitic, and a very unusual one. It is certainly not tubercular; the great improvement after anti-specific treatment is, I think, sufficient to set all doubts as to the etiology at rest.

Dr. MONEY had seen several cases of syphilitic tongue. It took usually the form either of serpiginous ulceration, of psoriasis, or of gumma.

Mr. CARTER inquired what was the condition of the larynx; was there family history of syphilis? The patient did not possess a characteristic facies, nor Hutchinsonian teeth.

Dr. ORWIN, in reply, said the mother had had two other children, both older, which were healthy; the only specific history was that the child had "snuffles" at birth. He looked upon the case as an unusual one, because there was no other specific history. It could not be a case of tubercular ulceration.

Mr. CARTER asked whether the vaccination scars were normal.

Mr. PYE said that one would want the clearest evidence of gumma or inherited syphilis in this case before one could say definitely that it was not primary syphilis.

## A CASE OF SEVERE TALIPES EQUINUS TREATED BY IMMEDIATE REDUCTION AT THE TIME OF TENOTOMY.

By NOBLE SMITH, F.R.C.S.

THE patient, a boy aged 13, had been affected since infancy, both feet having been in a straight line with his legs. He walked on his toes with the help of crutches, and could not stand without external support.

One foot had been operated upon ten days before exhibition of the patient by the direct method, and the foot was in a perfectly natural position. The other remained in its deformed state. A photograph was shown which had been taken before operation, and which delineated both feet, equally severely deformed. The child was able to stand on the restored foot, holding the other up.

The exhibitor proposed to operate upon the other foot at once, and anticipated that the child would be able to walk naturally with the aid of instruments, and without crutches in a few weeks. By this plan of treatment, it was argued, the great tediousness of the course usually followed was avoided, and the results were better.

Mr. Noble Smith also exhibited a case of a child who was able to walk well upon the soles of his feet, which the casts showed were in the most extreme deformity of talipes varus at birth, the cure having been effected without osteotomy.

## AN UNUSUAL CASE OF PRIMARY SYPHILIS.

By A. MARMADUKE SHEILD, M.B.

A SINGLE woman, aged 32, a servant in an officer's family, residing in a large garrison town, consulted me on December 1st, 1886.

She was a well-nourished woman of very dark complexion. On the right cheek near the ala of the nose was a round, flat, sessile growth, the size of a florin, livid in colour, ulcerated on the surface, slightly excavated in the centre. A thin serous discharge exudes from the surface. The growth is not painful on manipulation, is firm in texture, and implicates the tissues of the cheek to some depth, but not with the hardness of cancer; the submaxillary glands are much enlarged, forming a series of manifest almond-shaped swellings which reach from the angle of the jaw to the symphysis. No evidence of melanosis about the growth. The history was briefly as follows. Three months ago she had a small pimple or sore in this situation, which used to bleed and annoy her. About two months ago it had got so large as to cause her much anxiety; her friends remarked upon it and she covered it with plaster. During the last month she has been under the care of various medical men, all of whom have treated her affection with strong caustics. Has had no "rash" or sore throat at any time. Is in the way of "walking out" with some of the privates and corporals of the regiment.

The woman was placed under the influence of mercury. On December 8th the growth was larger, and the granulations had assumed that mushroom-shaped appearance so characteristic of malignant disease. The diagnosis was at this time most doubtful.

On December 15th a well-marked syphilide, consisting of dark papules and scaly patches, appeared on the body and limbs. The mercury was continued steadily. The patient was shown to the Society as an interesting example of the similarity that might

exist between chancre and malignant disease. The condition of the neighbouring lymphatic glands was a great aid to diagnosis, for the multiple indolent bubœ of true syphilis was highly characteristic. In this case the nature of the sore had been so altered and aggravated by caustic as to render its appearance puzzling and deceptive. The explanation of its occurrence was attributed to direct inoculation of the pimple on the cheek, probably in the act of kissing a person with secondary manifestations on the lips or tongue.

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*January 10th, 1887.*

### PHOSPHATIC DIABETES.

By CHARLES HENRY RALFE, M.D. Cantab., F.R.C.P.L.

AMONG the numerous investigations that have engaged the attention of physiologists during the last fifteen years, few yield in interest and importance to the study of the part played by the inorganic constituents of the body in histogenesis, and their influence in producing the daily and hourly variations which occur in the chemical composition of the secretions. Although this branch of animal physiology is only partially developed, yet our knowledge in this direction is steadily and constantly advancing, and the advance will be more rapid when it becomes clearly perceived how greatly minute variations of the inorganic constituents conveyed by the blood plasma to the cells influence for good or evil the processes of nutrition going on in the tissues. I can here only glance at some of the more important facts that have been established in this direction, and touch only on those points which are most closely related to the subject-matter of the present paper.

Twenty years ago it was stated in most text-books that inorganic substances passed unaltered through the body, and, that the same weight of saline constituents was recoverable from the urine and fæces as was introduced during the same period with the food and drink. The first advance on this simple view was made when it was discovered that chloride of sodium was retained in the body,

and consequently disappeared from the urine, in certain diseases attended with increased cell-formation; and that even under normal conditions only four-fifths of the common salt ingested left the body as such, the remaining fifth being decomposed and altered in constitution within the system. Further researches led to the important discovery that whilst inorganic salts pass with immense and usually uniform rapidity into the circulation, and thence to the tissues, their discharge is by no means so regular, and they are detained for very unequal periods, which apparently depends on the need of the tissue to which they are supplied. Thus both Hoffmann and Lascar have shown that, however great the tendency of the alkaline bases is to combine with acids and acid salts, these cannot be withdrawn from the alkaline blood, but are powerfully withheld to maintain its alkalinity. And this fact is illustrated by what occurs in scurvy, for, as I pointed out in 1877,\* and it has since been corroborated by Zuelzer,† as soon as the alkaline carbonates cease to be supplied by means of vegetables, the alkaline phosphates begin at once to disappear from the urine, evidently to maintain the alkalescence of the blood diminished by the withdrawal of the alkaline carbonates. In connection with this it is interesting to notice that Dr. Gee‡ has likewise called attention to the remarkable fact that in ague, on the days of the paroxysms, the phosphates almost entirely disappear from the urine; and although Dr. Gee has not attempted an explanation of the phenomena, still it is not unlikely that this is again an instance of a salt being withheld to supply a special requirement, whilst another is being discharged in excess; for it is important to notice in connection with this withdrawal of phosphoric acid during the ague fit that the chlorides are at that time eliminated in considerable excess. It would be easy to multiply examples, but enough has been said to emphasise the importance of the rôle played by the inorganic substances in the economy.

Of all inorganic constituents phosphorus has always been regarded as holding the prominent position. When first separated from the urine by Brandt (1669) it was at once hailed by the physiologists of the day as the "blood of nature," and quacks held forth that their "wonderful shining pills" contained the true

\* 'General Pathology of Scurvy' (Lewis, London, 1887).

† 'Untersuchungen über die Semilogie des Harns;' Berlin, 1884.

‡ 'St. Bartholomew's Hospital Reports,' vol. viii.

elixir of life. The discovery, at the commencement of this century, by Woolaston, that certain calculi were composed, some wholly, others in part, of phosphate of lime and ammonio-magnesium phosphate, led to further inquiries as to the conditions that cause the deposition of these substances in the urinary passages; and to Dr. Prout and Dr. Golding Bird we are indebted for the discovery of many important facts connected with phosphaturia. Unfortunately at first sufficient care was not taken to discriminate between the conditions which led to the deposition of phosphate of lime, and that which caused the precipitation of ammonio-magnesium phosphate; and as the latter was often associated with paraplegia, or followed after spinal injury, the idea that phosphaturia was caused by irritation or disease of the nervous system became dominant, and it was taught that the phosphates in the urine were derived chiefly, if not entirely, from the phosphorus of the disintegrated nervous matter. Dr. Owen Rees was the first to combat the view that phosphaturia was caused in all cases by excessive elimination; and pointed out that so far as deposition of triple phosphate was concerned, it might be accounted for by the secretion of abnormal mucus, which, owing its alkalinity to fixed alkali when mixed with urine, united with the acids of the ammoniacal salts and set free ammonia, with consequent deposition of ammonia-magnesium phosphate. Dr. Bence Jones went further than this: he showed, first, that the causes of the deposition of the triple phosphate were due entirely to local conditions, which brought about an ammoniacal state of the urine from decomposition of the urea; and the admixture of calcium phosphate with the triple phosphate (mixed phosphates) was caused simply by precipitation from alkaline urine, and not due to the presence in excess of the phosphates themselves. Moreover, in that form of phosphaturia in which calcium phosphate was deposited alone from the urine, he declared the deposition was caused solely by precipitation from urine whose alkalinity was due to the presence of fixed alkali. Besides this, he stated that no increase of quantity in the amount of phosphates in the urine takes place in spinal diseases; nor in chronic diseases of the nervous system generally; nor in chronic cases of general paralysis, mania, or melancholia; nor in chronic diseases in which the nervous system is not specially affected; nor in fevers, or acute inflammations of fibrous, muscular, or cartilaginous tissues; and

that the only decided increase of the phosphates noticed occurred in acute inflammation of the brain substance, not of the membranes, unless the brain was likewise affected. He also stated that there was not the least reason to believe that there was any constitutional state especially characterised by an excessive excretion of phosphates, and that the so-called phosphatic diathesis was simply alkaline urine.

These views have been generally accepted in England, and the teaching as laid down in leading modern text-books is that the phosphaturia in which calcium phosphate is solely deposited depends on urine alkaline from *fixed* alkali, and denotes nothing more than some disturbance of digestion in which the *alkaline tide* of the urine becomes exaggerated; that the phosphaturia in which both kinds of phosphates are deposited depends on urine alkaline from *volatile* alkali which arises from decomposition of urea in the urinary passages, and which is mainly brought about by local conditions; and, lastly, that the excretion of phosphates, even if in excess, has no special pathological significance. In Germany, however, the importance of the excretion of phosphoric acid has attracted more attention; for whilst observers there admit the facts connected with the deposition of phosphates from alkaline urine both fixed and volatile, they maintain that the study of the daily variations of the amount of phosphoric acid, especially as regards its relationship to the excretion of urea, has an important bearing on various questions connected with tissue metabolism, both normal and abnormal. They have shown, further, that Dr. Bence Jones was mistaken when he stated that no excessive elimination took place in chronic nervous disorders, since it is exactly in this class that the greatest increase has been found, especially in "depressed states." Besides this, they maintain that the fact of there being no absolute increase in the excretion of phosphoric acid does not disprove the view of an increased elimination of phosphorous bodies, since they have very conclusively shown that in many nervous affections phosphorus appears in the urine, not in its fully oxidised state as phosphoric acid, but as lecithin, or as glycero-phosphoric acid. In France Professor Teissier of Lyons, who has paid considerable attention to the physiological conditions which regulate the elimination of phosphoric acid from the body, has described a condition to which he has applied the term "phosphatic diabetes," and which consists in the continuous and excessive

discharge of phosphates by the urine, attended with symptoms not unlike those of saccharine diabetes. This condition, Professor Teissier states, may be observed (1) in certain functional derangements of the nervous system; (2) it may precede or accompany certain affections of the lungs; (3) it may coexist with glycosuria, or alternate with it; or (4) it may run a course distinct by itself. As I have seen a few cases like those described by Professor Teissier, I have ventured to bring them before the consideration of the Society to-night, in the hope that by attention being drawn to the subject it may be more closely investigated than has hitherto been the case. In relating the cases I intend to keep to Professor Teissier's classification; not because I altogether agree with him, but for convenience of reference and discussion. And again, in order to obviate the necessity of constantly reading figures of analysis and referring to the amounts of phosphoric acid passed, I may say that no case has been admitted to this series in which the daily average excretion has fallen below two-thirds more than the ordinary normal secretion.

*GROUP 1. Increased Excretion of Phosphoric Acid Associated with Disturbance of the Nervous System.*—The first case is that of a lad, aged 16, who was under my care at the Seamen's Hospital in 1876. When admitted he was in a stupid, semi-comatose condition, much emaciated and very feeble. He was passing considerable quantities of slightly acid urine of medium specific gravity containing a slight trace of albumen, but no sugar. In this case the excretion of phosphoric acid was for some time more than double what a lad of his age and weight (9 st.) should pass under ordinary circumstances. No other morbid conditions could be detected; and, after remaining in bed several days, he gradually brightened and began to gain in weight, whilst the excessive excretion of phosphoric acid fell at first to two-thirds and then to one-half more than the normal, at which point it remained till the patient's discharge.

The next case is the lad whom I have brought before the Society to-night. I first saw him in September of last year, in consultation with my friend Dr. Allt of Clapham. The symptoms were considerable and progressive emaciation and a dull lethargic condition, sitting for hours by himself doing nothing, and being roused to speak only with great difficulty. He also obstinately refused at times to take food, which had to be forced on him. No other special morbid condition could be detected. The urine was

highly acid, normal in quantity, about 40 ounces, with a specific gravity of 1036. The urea was in excess, whilst the amount of phosphoric acid was in considerable excess. Complete rest (either in bed or on a sofa), country air, and massage were advised, and for treatment bromide of potassium, *nux vomica*, and cod-liver oil. The patient then went to Melton Mowbray, where he has been under the care of Dr. Powell, who has kindly from time to time kept me informed with regard to the case, and sent me samples of the twenty-four hours' urine to analyse. The treatment has been varied from time to time, mineral acids with strychnine and small doses of opium being that generally persisted in. Till just before Christmas no improvement was manifested, though the patient was certainly less dull; still the high specific gravity was maintained, and the emaciation was very marked. But about three weeks since the patient began to take his cod-liver oil more regularly, and Dr. Powell soon after noted an increase of weight, whilst the excretion of phosphoric acid fell to 3·9 grms. daily, which for the boy's age and weight still represent very nearly two-thirds more than what the normal excretion should be. I may mention that the patient has been at times troubled with boils.

In another case, in which the patient was passing on an average 6 grms. of phosphoric acid in the twenty-four hours, a small syphilitic growth was found post mortem at the base of the brain, with some softening of the brain substance round. As, however, there was an intense polyuria amounting to 13 pints a day, with a specific gravity of 1002 to 1004, I think some of the increase in this case was due to the washing out of phosphoric acid from the tissues by the drainage going on through the body, and is not an instance of increased tissue metabolism.

*GROUP 2. Increased Excretion of Phosphoric Acid associated with Pulmonary Disease.*—I have met with three cases. The first, a young gentleman, aged 19, who was living in London engaged in mercantile pursuits. When I first saw him there was nothing definite to be made out, except that he complained greatly of lassitude and aching pains round his loins. A careful examination of the chest revealed no disease. The urine was normal in quantity, of high specific gravity, very acid, but occasionally becoming alkaline, when it deposited dense masses of calcium phosphate. The urea was in excess, and the daily elimination of phosphoric acid considerably above the normal. This patient was frequently troubled

with boils. As he became weaker, and it was evident that London life did not suit him, I advised a sea voyage, which I believe he took. Three years later I heard through a friend that the patient was dead, that two years after I had last seen him symptoms of pulmonary disease manifested themselves, which ran a rapid course and terminated fatally.

The second case was sent me by Surgeon-General Balfour. A gentleman, aged 49, who had spent the greater part of his life abroad, was in 1881 troubled with polyuria, passing about 80 ounces of urine a day. This urine was acid, and had an average specific gravity of 1015; there was some excess of urea, and a considerable increase in the daily excretion of phosphoric acid. He suffered from thirst, loss of flesh, and complained of severe rheumatic pains in the loins and pelvic regions; he also was troubled with boils. On my advice he left London and went to reside at Brighton, and shortly after the urinary flux fell from 80 to 60 ounces, whilst the excessive elimination of phosphoric acid was also reduced. After he had resided at Brighton about a year he began to suffer from cough, and again to lose flesh. Before this he had exhibited no signs of lung mischief, but now on examination I found a patch of consolidation in the apex of the right lung. As it was then autumn I advised him to winter either in the south of France, Algiers, or Sicily. He chose the latter, and I heard nothing more of him to the other day, when Dr. Balfour told me he died the next year at Naples of typhoid fever, contracted at the same time as the fatal seizure of Professor Munro of Cambridge.

A third case was observed in a tubercular lad who was under my care at the Seamen's Hospital in 1877. He was admitted suffering from severe debility and prostration, complaining of pain in all his limbs, and especially across the loins, and some coarse râles were heard in the bronchial tubes. The urine was clear, acid, and abundant, averaging about 6 pints daily, with an average specific gravity of 1016, urea was in excess, and the phosphoric acid excreted amounted on more than one occasion to over 9 grms. in the twenty-four hours; whilst the average of several observations gave nearly 7 grms. Previously to the commencement of the illness, about three weeks before admission, he had always enjoyed good health. During the attack he had lost 18 lbs. in weight. After being kept a week in bed the râles in the chest

cleared up, and he was not so prostrate, but several boils made their appearance. He regained a greater portion of his lost weight whilst in hospital, and the urinary secretion was diminished from an average of 6 pints to barely 4, and the phosphoric acid from 9·6 to 4·8 grms.

GROUP 3. *Increased Excretion of Phosphoric Acid alternating or co-existing with Saccharine Diabetes.*—I am indebted to Mr. Meredith for a unique example, as far as my experience goes, of phosphatic, replacing saccharine, diabetes. The case was that of a young American gentleman, aged 21, and a student of Harvard University. About two years previously to my seeing him he was training for a college boat race, and one day, whilst practising, he was much exposed to the sun's rays, which fell on the upper part of his back and neck, which were not protected by his rowing jersey. So strong was the action of the sun that he felt very faint, and the next day the skin of his neck was blistered, and for some time afterwards his neck felt stiff. About six months after this it was noticed that he was looking pale and thin, and had lost weight, and he himself complained of weakness and of sciatic pains. Dr. Sabine, his medical attendant, then discovered sugar in his urine, and a sample being sent to the laboratory at Harvard, it was found to contain as much as 5 per cent. of sugar, whilst a decided increase of urea and phosphoric acid was also noted. A strictly regulated diet controlled the amount of sugar, but it always asserted itself again on the slightest breach of discipline or attempt to study, or after more than ordinary exercise. It was then determined that he should come to Europe and see if anything fresh could be suggested. On his arrival Mr. Meredith kindly gave him my name; the reports of the American physicians were handed me, and the urine of the twenty-four hours was sent to me for analysis. It was extremely acid, normal in amount, but with a specific gravity of 1040; it contained  $2\frac{1}{2}$  per cent. of sugar, the patient being on partly restricted diet; there was also considerable excess of urea and phosphoric acid. The patient had lost altogether more than a stone in weight, was much depressed, suffered greatly from headache, pains in the pelvis and thighs, and was also troubled with boils. I ordered the patient to continue his diet, put him on liquor arsenicalis bromidi, and told him to take two Russian vapour baths a week. This treatment was continued three weeks, and the patient was better in every way. There was only a trace of

sugar in the urine, the pains had diminished, and there was less headache. The treatment was continued for another month, during which period the patient, instead of residing in London, spent the time chiefly at the seaside. The urine now became free from sugar, except now and then, when a trace appeared; but, to my astonishment, there was no great fall in the specific gravity, which, with a normal secretion of urine (from 40 to 50 ounces daily), ranged from 1030 to 1033; and it was then I found that he was passing daily an enormous quantity of phosphate of lime. I now placed him upon mineral acids with *nux vomica*, and told him to take a tablespoonful of cod-liver oil once a day in lime-juice, and to spend the summer among the high Alps. A slight relaxation was permitted in his diet, a small quantity of wheat bread and some of the least injurious vegetables, such as tomatoes, French beans, cauliflowers, &c., being allowed. He was away the greater part of three months, and on his return looked much improved, had gained 6 lbs. in weight, lost all his pains and headache, and was able to take long walks without fatigue. The urine still continued at from 40 to 50 ounces, but the range of specific gravity was now 1024 to 1027, and the amount of phosphoric acid daily excreted, though far from being within normal limits, was still much reduced; no sugar had been seen for several weeks. He now returned to America, with instructions to follow a moderately restricted diet for at least two years, not to study more than three hours daily, to be careful not to engage in athletic pursuits, and only to take moderate exercise. A year after his return I received a letter to say that he had completely regained his health—that he was completing his course at the university, and that for the summer he intended to camp out west on one of the prairies. His urine, which, according to my advice, is examined once a week, is still normal in quantity, and the specific gravity is nearly so; the sugar only occasionally reappears in minute quantities.

In a second case the phosphaturia coexisted with a mild form of diabetes. The patient first came under notice in 1880; he had suffered some time before from saccharine urine, which, however, had not much affected his general health, when he began almost suddenly to experience constant aching pains in the loins and pelvic region; he also became dispirited and hypochondriacal, and began to lose flesh. The amount of sugar had always been controlled by diet, and at the onset of these symptoms he certainly was not pass-

ing more sugar than he had before. Nor could any correspondence be observed between the amounts of sugar and the amount of phosphoric acid, for the mean of three observations made when no sugar was present in the urine gave a daily excretion of 6·7 grms., and 6·8 grms. (also the mean of three observations) when the sugar was considerable. After treatment the daily average excretion was reduced to 3·8 grms., but the sugar still remained persistent, always returning when the dietetic regulations were at all relaxed. The patient, who is still living, says that the tendency to excessive phosphatic excretion recurs from time to time, and that he can always tell when to send his urine for examination by the recurrence of the boring and aching pains in the loins and pelvis.

In a case for which I am indebted to Mr. Pearce Gould, sugar had been repeatedly found in the urine by the medical attendant, and the patient's diet regulated accordingly. Owing to some mistake the patient's visit to me was delayed some weeks, during which he was under dietetic restriction. When I saw him, the urine contained no sugar, but had a specific gravity of 1030, was highly acid, and contained a very considerable excess of phosphoric acid. This patient, Mr. Gould tells me, is now quite well.

*GROUP 4. Increased Elimination of Phosphoric Acid, without any Special Connection, apparently running an Independent Course.*—I have notes of five such cases. In all, the elimination of phosphoric acid was considerable; the patients suffered from boring, aching, rheumatic pains in the loins and in the pelvis, together with hypochondriasis and some degree of emaciation. The urines varied; in some the secretion was normal, but in others increased. The urea was always in excess, and with the excessive excretion of phosphoric acid a deposit of calcium oxalate was nearly invariably noted. All complained more or less of constipation alternating with a yeasty-looking diarrhoea, and indigestion and flatulence were always more or less prominent. As these cases correspond in most particulars with those described some years ago by Beneke in his work on the 'Pathology of Phosphate and Oxalate of Lime,' I have not thought it necessary to quote them separately. None of them resemble those described by Professor Teissier, as simulating saccharine diabetes only without the sugar. As I have said, they seem very much like ordinary cases of so-called oxaluria.

Of the thirteen cases thus briefly recorded all, with the excep-

tion of two, occurred in young male adults. The symptoms common to all, though varying greatly in degree, were—*loss of flesh*, in some cases to the extent of considerable emaciation; *aching rheumatic pains*, chiefly affecting the lower part of the back and pelvic regions; *a dry harsh skin* and a tendency to *boils*; *appetite* generally ravenous, but in some cases a morbid refusal of food. Teissier says that in some cases under his observation *cataract* has developed, just as in saccharine diabetes; this I have never noticed. In the majority of cases there was polyuria, but this in no way approached, either in amount or character, the polyuria of diabetes insipidus. The increase of urinary water rarely ever exceeded four pints and a half; the highest observed, with the exception of the doubtful case of tumour of the brain, was six pints, as compared with the enormous diuresis of diabetes insipidus: whilst instead of the specific gravity falling to an extremely low limit, as in insipid diabetes, it was well maintained, showing that, unlike the insipid form, there was in these cases a very considerable drain of solid matter from the body. In some of the cases, however, the amount of urine passed was normal, but in these the specific gravity was greatly increased, all pointing to the same fact—viz., the *increased elimination of solid matters* by the urine. In all my cases the urea was in excess—in some to a considerable extent; in others it was not so marked. Teissier, however, has published cases in which no increase of urea was observed, and he contends that it is not at all necessary that there should be any when there is an increased elimination of phosphoric acid. On this point an observation of Sir William Roberts throws some light. Speaking of the cases originally described by Prout under the term “azoturia”—cases exhibiting a dense urine and a train of nervous symptoms,—he says that these turned out, on more exact investigation, to want the special feature indicated by Prout as the essential one—namely, an absolute increase in the daily discharge of urea. It does not appear that in these cases Sir William Roberts determined the amount of phosphates present in the urine; had he done so, he most probably would have found them in considerable excess. Indeed, it is difficult to account for the increased density of the urine otherwise; for if there was no excess of urea, and there was no sugar present, what else could increase the density of the urine but the inorganic constituents? Now an excess of chlorides does not increase the density of urine,

because, unless water is withheld, they always increase the flow of aqueous excretion, so, if anything, the specific gravity falls. Whilst the sulphates when in excess in the urine are always accompanied by excess of urea, which Sir William Roberts tells us in these cases was not observed. There remains therefore only the phosphates as likely to cause the increased density of urine; and as Professor Teissier has shown, and as also the observations of Zuelzer, Edlessen, and others have shown, the excretion of phosphoric acid may be very greatly increased without any corresponding increase in the amount of urea. The great feature, therefore, of these cases is *the increased elimination of phosphoric acid, with or without a corresponding increase of the other constituents of the urine*: a feature which distinguishes it from *insipid diabetes*, with which it has been improperly confounded, and in which there is only an increase of water and no other morbid change; and from *azoturia*, in which urea is decidedly increased.

With regard to the pathology of the condition, many views have been brought forward, which are too numerous for discussion here. I will only therefore mention those that occur to me as being most probable. In the first place I would reduce the four groups to two—placing Groups 1 and 2 together, and likewise combining Groups 3 and 4. I do not believe that phthisis is ever necessarily attended or preceded by an exaggerated excretion of phosphoric acid. I have examined the urine of a good many tubercular and phthisical patients in all stages, and failed to establish anything of the sort. It is true that Marcet has found a great diminution of phosphoric acid in the ash of diseased lung as compared with healthy lung, but the removal of the phosphoric acid would be so gradual as scarcely to affect the urinary secretion. I believe, therefore, that the cases of increased secretion of phosphoric acid associated with lung disease are accidental. Naturally one would expect abnormal tissue metabolism in weak and delicate subjects, and certainly phthisical tendencies would be likely to be developed in persons suffering from a long-continued drain of such an important vital constituent as phosphorus.

Then, again, with regard to the cases in which nervous symptoms are prominent, are these due to disintegration of nervous tissue? is there increased oxidation going on? and are the phosphates an expression of the destruction of tissue? I think not, and

I think the fact that the other urinary constituents are not always increased *pari passu* strongly against this view ; whilst the fact established by recent German observers, that increased elimination of phosphoric acid occurs chiefly in depressed conditions of the nervous system, and that there is evidence of lowered vitality generally, points, to my mind, rather to defective than to increased metabolism, that the tissues are unable to utilise the phosphorus brought to them for nutrition, and that consequently a greater amount has to pass through the system daily. I am therefore inclined to classify the first two groups as *cases of excessive elimination of phosphoric acid dependent upon defective nutrition.*

With regard to the last two groups, the one relating to the connection between sugar and phosphoric acid in diabetes mellitus is the more interesting. Many explanations have also here been suggested. One, that phosphoric acid replaces the sugar in consequence of some occult change in the nervous system, may be dismissed as visionary and vague. The others that occur to me being most likely are (*a*) that instead of the sugar passing into the urine, it becomes partially oxidised in the system into a series of acids—oxybutyric, crotonic, glycollic, lactic, &c.—which, circulating through the tissues, dissolves out the phosphates, especially the earthy salts. This explanation receives support from recently ascertained facts respecting the nature of the “acid intoxication” that so frequently marks the course of diabetes. The other explanation is that in diabetes mellitus, as is now a well-recognised fact, there is a considerable elimination of phosphorus in an unoxidised form, as lecithin, or glycero-phosphoric acid. Now, should improved oxidation take place in the body, this unoxidised phosphorus would probably undergo oxidation and appear as phosphoric acid. This view is supported by the fact that in the two cases in which sugar had been observed, but had disappeared and been replaced by an excessive excretion of phosphoric acid, the tendency was towards recovery. At first, with defective oxidation there was sugar and probably unoxidised phosphorus ; with improved oxidation the sugar disappeared, and the lecithin or glycero-phosphoric acid was oxidised into phosphoric acid ; and a further improvement led to the disappearance of the excessive excretion of phosphoric acid and ultimate restoration of health. No doubt both conditions—namely, the imperfect oxidation of sugar into intermediate acids and the oxidation of unoxidised phosphorus

into phosphoric acid—are at work in these cases. With regard to Group 4, which ran a distinct course without association with any special form of disease, as I have already said they seem to correspond, as far as I have been able to judge, with those cases of oxaluria attended with increased excretion of phosphoric acid described by Beneke, who considered them to be due to the excessive formation of lactic acid in the intestines and its absorption into the body and dissolution of the phosphates out of the tissues. These cases, then, probably depend on a similar condition, such as that which causes the appearance in excess of phosphates in saccharine diabetes. I think, therefore, we may classify these two groups as *cases of excessive elimination of phosphoric acid dependent on abnormal formation of acid within the body.*

With regard to the prognosis in these cases, those arising from defective nutrition are the most unsatisfactory. With rest—or, better still, the employment of massage—they regain weight, and the excessive elimination of phosphoric acid is somewhat diminished, never completely; then when allowed to get about they fall back again, till, owing to the general exhaustion, they become victims to some acute disease, or else drift on into phthisis, or, as Teissier says, sometimes into saccharine diabetes.

With respect to the second division, the prognosis is more favourable. Of the three cases of saccharine diabetes associated with considerable excretion of phosphoric acid, two got quite well; the first step being the replacement of the sugar by phosphoric acid in excess. The second case has remained a mild case of diabetes mellitus for over seven years.

Concerning the cases resembling oxaluria with increased phosphoric acid excretion, they usually get much better under appropriate treatment, but are troublesome from their frequent relapses.

Lastly, in respect to the term “phosphatic diabetes,” as will have been gathered from the preceding remarks, excessive elimination of phosphoric acid is symptomatic rather than a disease *per se*. It would be wrong, therefore, to use such a distinctive appellation without strictly limiting the conditions of its use. And this would be to employ it as a distinguishing term from “phosphaturia.” This latter admirably describes that condition in which phosphates are precipitated from alkaline urine, whether fixed or volatile; but as it would be awkward to speak of phospha-

turia due to deposition, and of phosphaturia due to excessive elimination, I would therefore propose to use the term "phosphatic diabetes" to distinguish the latter, and retain phosphaturia to designate the former, condition.

## A CASE OF WOUND OF THE COMMON FEMORAL VEIN; SECONDARY HÆMORRHAGE FROM THE COMMON FEMORAL ARTERY; SEPTICÆMIA; DEATH.

BY A. PEARCE GOULD, M.S.

THE wound of a vein is, as a rule, less serious and more easily dealt with than a wound of the corresponding artery, and for this among other reasons wounds of veins have received but scant notice at the hands of most surgical writers. Wounds of very large veins, however, are very grave injuries, and there are several interesting questions connected with their treatment which may be considered as still open to discussion. Having recently had to treat a case of wound of the common femoral vein attended with grave complications, I have thought an account of it might be considered worthy of attention.

On the evening of October 11th, 1886, M. M—, an Italian ice-cream seller, was stooping down in the street, when on rising he came in contact with the knife of a cat's meat woman who was standing by his side, the knife entering his left groin. Blood flowed very freely, and he went to a neighbouring chemist, who applied a pad and bandage and sent him to Middlesex Hospital. On his arrival at the hospital the haemorrhage had ceased, but while the house-surgeon (Mr. Livermore) was preparing to readjust the pad the man vomited, and at once a full stream of venous blood spurted from the wound. A compress was firmly bandaged on and I was sent for.

I found the man pale, cold, and rather faint from loss of blood, and as the haemorrhage had been so abundant I determined to secure the wounded vessel. An anæsthetic was administered by Mr. Fardon, and a Petit's tourniquet was applied to the thigh *below* the wound. The wound was a clean cut half an inch long, immediately below and parallel with Poupart's ligament and exactly over the common femoral artery; a probe passed into it slipped downwards and inwards. There was no alteration in the femoral or tibial pulse. I enlarged the wound by a vertical incision about 3 inches long, and turned out a considerable quantity of clotted blood which was lying beneath the fascia lata; upon this very free venous haemorrhage ensued, which was with difficulty held in check by digital pressure above the wound. I then introduced my finger into the wound, and found that it passed quite into the common femoral vein through a wound which severed the whole anterior

segment of the vessel. A ligature was passed around the vein above and below the wound and tied. This did not arrest the bleeding, which was then seen to come from the internal saphena vein, which entered the femoral just opposite the wound ; a ligature was passed around this vein and tied. But blood still welled up from the wounded vessel, and a further search showed that another vein entered the femoral trunk just opposite the wound in the segment between the two ligatures. This vein was tied, and then all haemorrhage was found to be arrested. The ligatures were of carbolised silk. The femoral vein was divided between the two ligatures. The man lost a good deal of blood during the operation, which was attended with considerable difficulty owing to the impossibility of completely arresting the haemorrhage by pressure above and below. The femoral artery was clearly seen during the operation, but was apparently uninjured. The wound was very thoroughly irrigated with solution of bichloride of mercury (1 in 2000), and was closed with catgut sutures, a drainage-tube being inserted at the lower angle, and dressed with sal alembroth wool. A flannel bandage was rolled around the limbs, and the man was returned to bed with the knee slightly flexed. A quarter of a grain of morphia was given hypodermically.

October 12th. Next morning he appeared comfortable ; pulse 96 ; temperature 98.4° ; sweating freely. The leg and foot were nearly as warm as the other side, and there was no oedema. The temperature rose in the evening to 101.2° ; and the urine was drawn off by catheter, as none had been passed.

October 13th. Temperature 103.6° ; pulse 100 ; profuse sweating ; patient restless at times. One grain of opium was ordered every six hours. The wound was dressed ; there was no redness of the edges, swelling, or bagging. The drainage-tube was removed. At 9 P.M. the temperature was 104°, and, as the bowels had not acted, an ounce and a half of compound senna mixture was given.

October 14th. Temperature 101°. Bowels acted five times during the night, and this diarrhoea continued through the day, in spite of the opium which was taken. There was slight oedema of the left foot and lower part of the leg.

October 15th. Temperature 101° ; pulse 108. Diarrhoea has ceased. The wound was dressed, and a considerable quantity of turbid serum oozed from it. The highest two stitches were removed, the edges separated, and the cavity was well washed out with corrosive sublimate solution (1 in 2000).

October 16th. Temperature 100° ; pulse 96 ; no sweating. On removing the dressing the edges were found sloughy, so the remaining stitches were removed, the edges separated, and the part well irrigated with corrosive sublimate.

October 17th. Delirium set in ; at 12 noon he had a fit, being seized with tremors and cough, followed by dyspnoea, the patient with wide-open mouth gasping for breath for four or five minutes. The wound was dressed and well irrigated. One-sixth of a grain of morphia was injected, but he slept only a very short time after it, and at night a mixture containing half a drachm of bromide of potassium, one scruple of chloral hydrate, and fifteen minims of tincture of hyoscyamus was ordered to be given every hour until sleep was obtained. The delirium was closely like delirium tremens. Four doses of this mixture produced no effect, and the man had a very restless night. At 4 A.M. one-sixth of a grain of morphia was again injected under the skin.

October 18th. The patient has had two hours' sleep, and is much more sensible. The wound looks healthier. During the day he had three injections of one-sixth of a grain of morphia.

October 19th. He had had a fairly good night and was better; the edges of the wound were granulating. He was quiet all through the day, and took nourishment well.

October 20th. The improvement continued; in the evening he passed urine voluntarily for the first time.

At 12.30 A.M. on the morning of October 21st, after a violent fit of coughing, profuse haemorrhage came on, and a good deal of blood was lost before aid arrived. The artery was controlled above Poupart's ligament, and Mr. Livermore seized the bleeding point with pressure-forceps. I was sent for, and had the patient placed under the influence of chloroform. I found that the bleeding came from the common femoral artery; without difficulty I placed a silk ligature upon the vessel close below Poupart's ligament. The vessel was softened, and obviously unfit for a ligature as far down as the origin of the profunda, so a ligature was placed around both the superficial and the deep femoral arteries; this entirely arrested the haemorrhage. The wound was again irrigated with the mercury solution, and dressed as before with alembroth wool. The limb was wrapped in a thick layer of cotton-wool, and hot bottles were placed in the bed.

The patient never recovered from the effects of the loss of blood, and he died in the evening of October 22nd. During the last five days of his life the foot and leg became more oedematous, and especially was this so after the second operation. The foot and leg did not regain their warmth after the ligature of the artery.

The necropsy was made nineteen hours after death by Mr. Roger Williams. Rigor mortis was present, and the body was jaundiced in appearance. The two ends of the femoral artery were separated by about 2 inches, each secured by a ligature; in the upper end was found a rather firm reddish clot, which extended up to and obliterated the origin of the deep epigastric artery; the distal end was filled by a much smaller and softer clot, about 3 inches long. The tied end of the profunda femoris artery was found between the ends of the femoral artery. The upper end of the femoral vein was found with its ligature lying loose by it; there was no ligature over or near the distal end. A ligature was found around the internal saphena vein, and another round the external circumflex vein. The profunda vein entered the lower end of the femoral vein. There was a broken-down clot filling the external iliac vein from the entrance of the circumflex iliac vein and extending almost up to the vena cava. The left lower limb was deeply congested, and swollen from oedema and gas generated by decomposition. Liver and kidneys fatty. The spleen weighed  $14\frac{1}{2}$  oz., and was deeply congested. The endocardium on the right side of the heart was stained red.

*Remarks.*—I would submit the following interpretation of this case:—The wound of the vein was made with an infected knife. Antiseptic irrigation failed to remove all the infective material, which, remaining behind, set up inflammation in the wound and led to the breaking down of the thrombus in the vein. The femoral artery may have been bruised at the time of the original injury, although it showed no signs of it at the time, and the treatment pursued—plugging the wound, &c.—may have injured it, and so its walls quickly yielded to the septic processes in the wound, and secondary haemorrhage ensued, necessitating ligature of

arteries. Meanwhile the septic thrombus had been spreading up the iliac vein until all the direct channels for the venous blood returning from the lower limb were blocked, and with this moist gangrene occurred, its full development being prevented by the death of the patient from general blood-poisoning, accelerated by loss of blood.

The consideration of this case naturally divides itself into two heads—the occurrence of the septicæmia and the proper treatment of a wound of the common femoral vein.

1. *The Septicæmia.*—Of the fact of septic infection of the wound, with the formation of a spreading, softening thrombus in the iliac vein, there can be no doubt; but exactly to determine how this infection was occasioned is a more difficult matter. My own impression is that the cat's-meat knife was the carrier of the infection, and that my antiseptic irrigation, although carried out with a special view to this contingency, failed to remove all the infective material. All the usual precautions in wound treatment were adopted; the ligatures were of silk, which had been boiled in carbolic acid solution (5 per cent.), and kept in the same liquid. To the occurrence of this septic infection of the wound the fatal result is due, for it prevented the healing of the wound by first intention, was an important factor in the production of the secondary hæmorrhage, led to the complete closure of the channels for the venous return from the limb, and induced the constitutional change which was manifested by fever, sweating, diarrhœa, delirium, and jaundice.

2. *The Treatment of the Wounded Vein.*—From the 'Medical and Surgical History of the War of the Rebellion,' Dr. Lidell's article in Ashhurst's 'International Encyclopædia of Surgery,' and Nicaise's 'Thesis,' I have collected the following cases of wounds of the femoral vein. The cases in the accompanying table (page 181) illustrate several varieties of wound of the femoral vein: (a) wound of the vein during the removal of tumours, four cases, all ending in recovery; (b) accidental wound of the vein by bullet, sabre, hook, or fragment of bone, eleven cases—only three of these patients escaped with their life; (c) wound of the femoral vein during ligature of the artery for aneurism, two cases; (d) secondary hæmorrhage from the femoral vein, three cases, one of which recovered; (e) simultaneous wound of the femoral vein and the femoral or profunda artery, ten cases, with only one recovery. As in so many other statistical inquiries the cases have varied so much in their nature, and in some instances

## Cases of Wound of the Femoral Vein.

Surgeon.	Reference.	Injury.	Treatment.	Result.
Langenbeck ..	'Langenbeck's Archiv.', i, 1 ..	Wound of femoral vein during removal of sarcoma of groin	Ligation of femoral artery ..	Recovery.
Oettingen ..	'International Encyclop. of Surgery', vol. iii (Dr. Lidell's article)	Wound of femoral vein during removal of tumour of groin	Double ligation of vein; ligation of femoral artery	Recovery.
McClellan ..	Ditto .. .. .. ..	Wound of the internal saphena vein at the entrance to the femoral vein, during excision of tumour in the groin	Lateral ligation of the femoral vein	Recovery.
Roux ..	'Gazette des Hôpitaux,' 1853 (quoted by Nicaise)	Wound of femoral vein above saphena during removal of tumour in the groin	Double ligation of the femoral vein	Recovery.
McClellan ..	Dr. Lidell, <i>Op. cit.</i> .. ..	Wound of femoral vein and exposure of the femoral artery by a blunt hook	Ligation of femoral artery; compression of wounded vein	Gangrene of leg; amputation; recovery.
Ollier ..	Quoted by Nicaise .. .. ..	Wound of femoral vein in groin	Suture of skin wound; light compression	Recovery.
Delore ..	Ditto .. .. .. ..	Wound of femoral vein ..	Compression above the wound	Death from hemorrhage.

*Cases of Wound of the Femoral Vein—(continued).*

Surgeon.	Reference.	Injury.	Treatment.	Result.
Roux ..	Quoted by Nicaise ..	Compound fracture of the middle third of the femur; wound of the femoral vein ..	Wound enlarged; haemorrhage arrested by plugging	Recovery.
Larrey ..	Quoted by Nicaise (' Clin. Chir.', t. iii)	Sabre-wound of groin dividing saphena vein at the entrance to the femoral vein	Ligation of femoral and saphena veins	Recovery.
Garretson ..	' Medical and Surgical History of the War of the Rebellion,' second surgical volume	Wound of the femoral vein ..	Double ligation of femoral vein; single ligation of femoral artery	Death.
Leale ..	Ditto ..	..	Compresses ..	..
Pogue ..	Ditto ..	..	Gunshot-wound of femoral vein and prostate	Death on the 13th day.
..	Ditto ..	..	Gunshot-wound of femoral vein	Death on the 17th day.
..	Ditto ..	..	Gunshot-wound of femoral vein	Death on the 18th day.
..	Ditto ..	..	Wound of femoral vein ..	Death.
Dr. Lidell, <i>op. cit.</i> ..	..	..	Wound of femoral vein and erural nerve	Compresses and styptics ..

## Cases of Wound of the Femoral Vein—(continued).

Surgeon.	Reference.	Injury.	Treatment.	Result.
Agnew ..	Quoted by Lidell ..	Wound of femoral vein during ligature of artery for aneurism	Ligature of artery .. ..	Recovery.
Travers ..	‘Surgical Essays,’ by Cooper and Travers	Wound of femoral vein during ligature of artery for aneurism	.. .. ..	..
Gensoul ..	Quoted by Nicaise ..	Gunshot-wound of middle of thigh, fracturing femur; secondary haemorrhage from femoral vein	Ligature of common femoral artery	Death on the 7th day; no gangrene.
Després ..	Quoted by Nicaise (‘Soc. de Chir.,’ Oct. 18th, 1871)	Wound of upper part of thigh; secondary haemorrhage	Ligature of femoral vein ..	Recovery.
Nelson ..	‘Medical and Surgical History of the War of the Rebellion,’ Part 3rd	Gunshot-wound of groin; sloughing; pyæmia; secondary haemorrhage from a wound of femoral vein by a needle	Ligature of femoral artery ..	Death.
..	‘International Encycl. of Surgery’ (Dr. Lidell), vol. iii	Wound of femoral artery and vein	.. .. ..	Death in a few moments.
..	Ditto ..	Wound of femoral artery and vein	.. .. ..	Death in a few moments.

## Cases of Wound of the Femoral Vein—(continued).

Surgeon.	Reference.	Injury.	Treatment.	Result.
Rose ..	.. 'International Encyclop. of Surgery' (Dr. Lidell), vol. iii	Punctured wound of femoral artery and vein	Double ligature of femoral artery and vein	Recovery.
	.. Dr. Lidell's article, <i>op. cit.</i> ..	Gunshot-wound of femoral artery and vein	Ligation of femoral artery and vein	Gangrene; death.
Dougherty ..	'Medical and Surgical History of the War of the Rebellion,' 2nd surgical volume	Gunshot wound of femoral artery and vein	Double ligature of femoral artery and vein; amputation	Death.
Ditto ..	..	Wound of femoral artery and vein	Amputation .. .. ..	Pyæmia; death.
Ditto ..	..	Wound of femoral artery and vein	Amputation on ninth day ..	Death.
Ditto ..	..	Wound of thigh; secondary haemorrhage	Ligation of femoral artery and vein	Gangrene; death.
Thomson ..	..	Wound of femoral artery and vein	Double ligature of femoral artery and vein	Death.
Thomson ..	..	Wound of femoral vein and vein	Ligation of external iliac artery	Death.
Gayet ..	.. Quoted by Nicaise .. ..	..	..	..

the reports are so scanty, that this table cannot be relied upon as a safe and sufficient guide to the treatment of a wounded femoral vein. But at the same time it shows certain facts, the most striking of which is the variety of treatment that has been adopted, and the success that has attended almost every means used.

*Ligature of the Wounded Vein.*—The table shows four cases, in one of which the ligature was applied laterally; all these patients recovered, and no mention is made of subsequent œdema or congestion, still less of gangrene. On the other hand, Verneuil is quoted by Nicaise as having had three cases of lateral ligature of the femoral vein, all fatal. During the removal of cancerous glands from the groin on one occasion I had to tie the saphena vein at its juncture with the femoral vein. The man recovered, without any symptom referable to venous obstruction. In M'Clellan's case of lateral ligature of the vein, he speaks of the wound as a large one. The relative value of the lateral and circular ligature is the same in the femoral vein as in other situations, and although many cases of successful lateral ligature of large veins are recorded, the fatalities are too numerous to warrant its repetition, except in the case of punctures and small wounds.

*Ligature of the Femoral Artery.*—The table shows in all six cases, three ending in recovery and three in the death of the patient. The best known case is that of Langenbeck, who failed to secure the vein, and then, on ligating the artery, found the venous hæmorrhage stop. In one of the cases the ligature was placed upon the external iliac artery.

*Ligature of the Femoral Artery and Vein.*—This was done in three cases for wound of the femoral vein only (including one case of wound of the ending of the saphena vein), with two recoveries; and in four cases for simultaneous wound of the two vessels, with one recovery and three deaths. The ligature of an artery for wound of the corresponding vein was first done by Gensoul in 1831; but Langenbeck's name is specially associated with this form of treatment which has been advocated also by Tillmans and others. Langenbeck urged that the danger of ligating the main vein of a limb was the occurrence of gangrene from venous obstruction, and that by tying the main artery the supply of blood to the limb was so reduced that this danger was obviated. There are two sufficient answers to this argument: in the first place it has been

shown that ligature of the main vein of a limb does not produce gangrene so long as the various accessory channels of venous return are patent; in the second place ligature of an artery lessens very materially for a time the *vis a tergo* of the blood in the capillaries and veins, and therefore reduces the force which is opposed to the venous obstruction. I have three times ligatured the axillary vein while removing malignant growths from the axilla, and have not observed any serious effects upon the circulation, and many cases might be quoted to show that Langenbeck over-estimated the injurious effects of ligature of the main vein of a limb.

The treatment of a wound of such a large vein by compression is not to be recommended, especially in view of the fact that the haemorrhage, when apparently stayed, is liable to burst out during any expiratory effort, as was the case in my patient. Ollier's case, in which the only treatment adopted was suture of the skin wound and light compression, is a very striking one, and may serve as a good example in like instances.

The best treatment, therefore, appears to be the ligature of the wounded vein, and should I meet with another similar case this is the practice I am prepared to follow. When the secondary haemorrhage occurred, the question of amputation suggested itself, but such a course would have been quite unjustifiable in view of the success which has sometimes attended ligature of the femoral artery and vein. In my case it would have been doubly wrong, for it would have inflicted a most serious injury upon a patient already doomed to death from the septic thrombus in his iliac veins. In a table of cases of haemorrhage from veins in the 'Surgical History of the American War,' fifteen cases of wound of the femoral vein are mentioned, of which only two recovered.

Mr. CARTER felt much pleasure in asking the Fellows to thank Mr. Gould for his valuable contribution. He himself avoided corrosive sublimate because it damaged the instruments. He used boroglyceride, 1 in 20 of water, but he could not say whether that would cope with so powerful a poison as cat's-meat.

Mr. J. H. MORGAN agreed with Mr. Gould's explanation of the course of events in the case. In such wounds there was very great danger of direct carriage of septic matter into the circulation. He quoted the case of a young man who, to use Mr. Gould's expression, came in contact with a bullet which perforated the sternum but did not appear to go further. The wound was dressed antiseptically. The patient one day had a sudden rigor and later died. It was found post mortem that the bullet had perforated the sternum, and had impinged upon but not perforated the

internal mammary vein, this vessel was afterwards eaten into by ulceration so as to produce a pin-hole opening, and the patient died ultimately of pyæmia.

Mr. SHIELD said that septic changes frequently followed operations on veins, for instance, in varicocele and in varicose veins of legs. Some of these cases seemed to go wrong in spite of antiseptics. It was quite possible that this wound might have become septic independently of the poisoned knife. Was the wound on the inner or outer side of the vein? In a case quoted by Guthrie there was a notch of the artery followed by ulceration and haemorrhage. With all deference, he would have thought it better to have dusted the interior of such a wound thoroughly with iodoform, it being complicated with so much laceration of tissue.

Mr. GOULD, in reply, said the wound was quite across the front of the vein, and he could pass a finger into it. He could not see any notch or bruise of the artery. Iodoform was dusted outside the wound, but not in it; his experience of the use of corrosive sublimate in the interstices of wound was extremely favourable. He could not help feeling that the septic matter was introduced at the time of the wound; two hours intervened between its infliction and the operation. Could a large wound like this be rendered aseptic with more certainty? At first there was no redness of skin, and the superficial part of the wound was doing well; later a foul discharge came from below, from the depths of the wound.

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*January 24th, 1887.*

## HUNTERIAN CHANCRE ON THE LOWER LIP.

By Dr. G. R. TURNER.

THE patient, a man about 25, presented a circular indurated sore about the size of a shilling nearly in the middle line of the lower lip. On his chin, about an inch below, was a raised mushroom-like growth—looking not unlike a condyloma—which he attributed to a scratch, and was probably an inoculation from the labial sore. The glands of the submaxillary region were enlarged, but not markedly so. There were enlarged “amygdaloid” glands in other situations (cubital, inguinal, and posterior cervical). A papulo-squamous eruption was present on his forearms, chest, and forehead. He had a crop of chancroids on the penis—nearly healed—and slight suppuration on the left side in connection with an inguinal bubo. The chancre on the lip had been present nearly two months, and was rapidly healing. He could give no dates as to the sores on the penis. The papulo-squamous eruption had been out but two days. When first seen at the Seamen’s Hospital,

about four days before he was shown at the Medical Society, there was no trace of it. The man could give no account of the origin of the sore, and had had no treatment before presenting himself at the hospital.

Mr. CARTER said that the case possessed considerable interest from several points of view; more especially that of accidental inoculation. In this case it had probably been done by the finger. Some might perhaps remember the cases of chancre of the lip recorded by Ricord, in which the patients were compelled to confess that their mouths had been placed in contact with the woman's genitals. Years ago he had seen two cases of chancre of the upper eyelid, one in a boy of 13, the other in a girl of the same age. He was puzzled to know how the inoculation happened in these cases.

Mr. BLOXAM referred to the existence of two primary sores in the same individual, the possibility of which had been denied by several writers. There was no doubt that this not infrequently happened, and at the Lock Hospital he had seen three or four primary sores in the same individual, especially in the female. With regard to peculiarity of position, he had seen a chancre on the upper eyelid of a female of 60, one on the lower eyelid, on the side of the nose, in the axilla, on the nipple, on the abdominal wall, in the navel, on the leg, between the toes, at the anus, on the back, and on the back of the neck. He had seen two hard chancres on two contiguous digits of a medical man. All these cases were followed by sequelæ which rendered the diagnosis certain.

Mr. HARRISON CRIPPS had examined forty of these cases at St. Bartholomew's Hospital during the last twelve months. The majority of the sores in peculiar positions in women were not venereal, he meant they were not caught by inquisitiveness, if he might so term it. One old woman who had a chancre on the upper eyelid said she caught it from the body of her grandchild. The child on examination was found to be covered with an abundant cutaneous syphilide. Primary chancres, when they occurred on the skin, were not as a rule indurated. He agreed with Mr. Bloxam, that it was quite possible to have two chancres at once. He had often noticed that chancres on the lip caused very marked enlargement of the cervical glands, so that in some instances the case had been mistaken for one of mumps.

Mr. BLOXAM said that in women it was often difficult to decide whether a sore was syphilitic or not, because it attacked the mucous membrane and was not at first indurated as on the skin, but induration only followed when the ulceration had penetrated to the deeper tissues.

Mr. TURNER, in reply, said he had known of two primary chancres in the same individual. He agreed with Mr. Cripps that induration was frequently absent from primary sores. He had seen many sores, atypic in this respect, followed by secondary symptoms. Mr. Bloxam had agreed to take this patient into Charing Cross Hospital and treat him by subcutaneous injections of mercury, and would report the result to the Society at a later date.

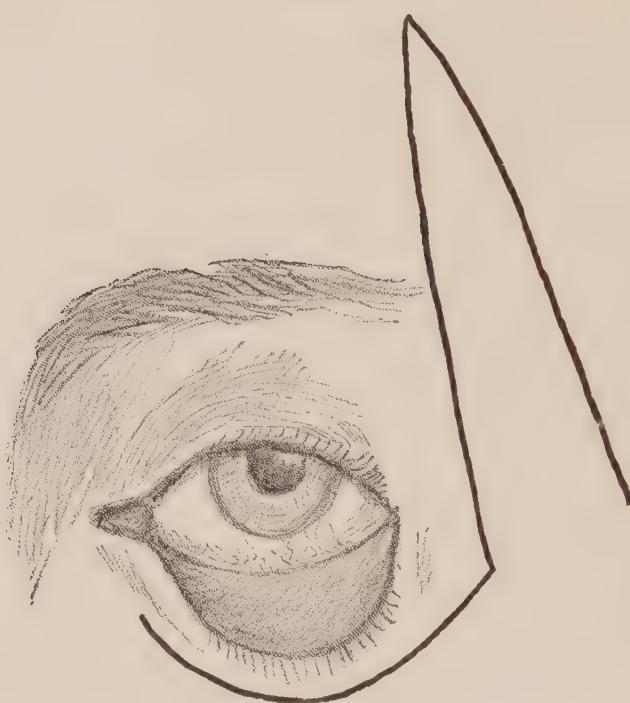
## AN OPERATION FOR THE CURE OF ECTROPION.

By N. DAVIES-COLLEY, M.C.

I do not know whether the mode of procedure adopted in the treatment of the following case is new, but, as I can find no mention of it in our text-books, I venture to bring it before the Society, in the hope that it may prove serviceable where the ordinary operations for the relief of this unsightly deformity have failed.

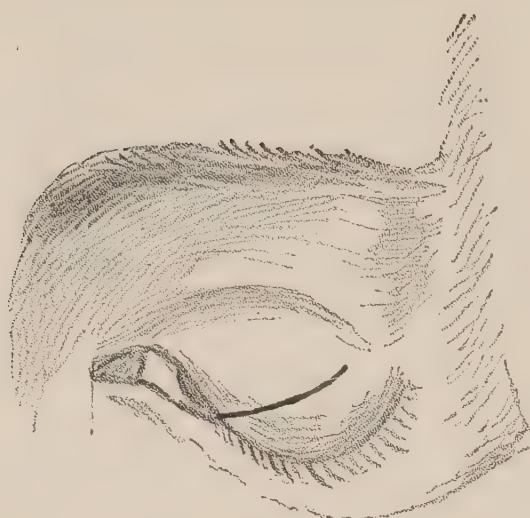
My patient, Michael R——, was a delicate boy of 3 years of age, who was admitted under my care into Guy's Hospital on October 25th, 1883, with necrosis of the superior maxilla following measles. The left lower eyelid was then much everted, and it became still more so after the removal of sequestra from the front and outer walls of the antrum. In January, 1884, the eyelids were pared and stitched together, and an incision was at the same time made below the lower eyelid to free it. For ten months the child went about with the eye thus closed up, but at the end of that time, when, at the urgent request of the friends, the union between the edges of the lids was divided, immediately the eversion of the lower lid returned. In a short time he was found to have an ulcer of the cornea and considerable conjunctivitis, as the result of the exposure of the eyeball. In January, 1885, I again operated in the same way as before, but this time, in addition to the paring and uniting of the lids, I took a flap more than 2 inches long, as indicated in Fig. 1, from the temples, and stitched it carefully into the gaping wound produced by the incision necessary to free the lower eyelid. The eversion was so great that I had much difficulty in paring the edge of the lower lid, for it lay at the bottom of a groove which intervened between the prominent granulations of the palpebral conjunctiva and the skin of the cheek. I was disappointed to find, at the end of a few months, that the flap which I had transplanted had not, as in many other cases in which I have operated similarly before, taken the place of the skin of the lower eyelid, but that although it had united perfectly, it had been drawn downwards by the contraction of the soft parts, so as to form the integument of the upper part of the cheek, while

FIG. 1.



the upper eyelid had been elongated, so that its lower border was about on the level of the floor of the orbit. There was a small chink still patent between the inner thirds of the eyelids, through which the boy was able to see a little, but it was evident that if this chink were enlarged by the division of the artificial union between the lids, the eversion of the lower lid would return, and it was probable that in addition to the deformity the boy would also suffer as before from the exposure of the cornea and conjunctiva. The only way which I could devise for restoring the use of the eye without producing these results was to divide the upper eyelid, and to convert that portion of it which had for some time occupied the position of the lower eyelid into a substitute for it. Accordingly, in May, 1886, sixteen months after the previous operation, I divided, under ether, all the structures of the upper eyelid with a pair of scissors, beginning my incision at the outer end of the chink between the edges of the inner thirds of the lids, and extending it, as indicated in Fig. 2, outwards and slightly upwards for from five-eighths to three-quarters of an inch. To prevent the cut edges uniting again, I then attached the skin to the mucous membrane by fine catgut sutures. From that time until now the boy has been able to use the left eye as well as the right, and there has been no return of the eversion. At first there

FIG. 2.



was some epiphora, but of late the tears only occasionally fall down the cheek. The angle which was formed by the junction of the normal and artificial edges of the new upper eyelid has rounded off, and now hardly attracts notice. He is able to open his eye well, but cannot close it completely, the gap between the lids being about an eighth of an inch wide. There is, however, no conjunctivitis or disease of the cornea from this slight exposure. There are two defects still apparent in his condition. As will be seen by reference to Fig. 3, which is a rough copy which I have

FIG. 3.



made of a very good portrait of him, taken by my late dresser, Mr. Theodore Fisher, some eyelashes emerge from the lower border of what is now his lower eyelid, and there is a small gap, about one-eighth of an inch broad, which must have remained ununited when the eyelids were stitched together two years ago. The great

tension of the parts has produced a triangular aperture below the gap, through which a patch of conjunctival granulations can be seen. When the boy has a cold, a few tears escape by this aperture and cause a slight epiphora. I hope on some future occasion to remove these slight defects by a further operation. If I had from the first intended to divide the upper eyelid, it would have been easy to produce a better result by paring away the eyelids so freely as to remove the eyelash bulbs before inserting the stitches. Moreover, I do not think that the preliminary transplantation of a flap is at all necessary to the operation.

## PLASTIC OPERATIONS OF FACE. CHEOLOPLASTY. RHINOPLASTY.

By J. ASTLEY BLOXAM, F.R.C.S.

J. C., aged 45. Admitted to Charing Cross Hospital, December 22nd, 1886.

In 1879 patient had ulceration of entire face as high up as a line drawn transversely across the face at the level of the infra-orbital ridges, covering malar aspect of the face all along the upper lip and around the mouth. This ulceration started at the tip of the nose, and then extended uniformly over the face, the sores all ran into one large mass so that the face was quite raw. When part was subjected to slight injury there was slight haemorrhage; pain was slight and only occasional. As ulcerated cheeks healed up, nose began to be taken away, and oval orifice began to close. A year elapsed before nasal organ was entirely destroyed, and for last five years it has remained quite stationary. For five years mouth has been contracting gradually, and then has remained stationary for last two years. Patient is a well-nourished man considering the impediment to taking food. The nose has completely eroded away, leaving an ovoid gap in face, dimensions 1 inch by  $\frac{3}{4}$  inch. *Septum nasi* can be seen, and appears eroded on its anterior border, triangular cartilage of nose being completely absent. A good view is obtained of all the meati and the turbinate bones. The opening of right nasal duct into inferior meatus can be distinctly seen. Patient has sensation of smell. Nasal bones themselves not much implicated, they appear nodulated at their

extremities. The mouth is represented by an opening,  $\frac{1}{2}$  inch in transverse diameter, and  $\frac{1}{4}$  inch in the vertical, which has the appearance of a cicatrix in which central portion has been punched out. Through this aperture patient feeds himself by chopping up his solid food very small.

Face is marked with scars and cicatrices, all eyelashes lost. Left lower eyelid devoid of eyelashes and slight ectropion. Patient is married, has no children.

January 4th, 1887. Dr. Sangster is of opinion, from absence of history of syphilis, and from examination of following points in present condition—the banded appearance of the scar from bones being unaffected, and the rapidity of the ulceration—that this is a case of lupus and not syphilis.

January 13th. Patient placed under an anæsthetic, and a tube passed into the orifice representing the nose. The tongue was secured by a piece of string passed through the tip. Mr. Bloxam made an incision through the cheek on either side, and turned mucous membrane down over the lower lip, and fastened it to the incision in the skin by horse-hair sutures close together. The skin of upper lip was then stitched to the mucous membrane with horse-hair. Evening temperature  $100^{\circ}$ . On examining the mouth the soft palate was found entirely destroyed by ulceration.

January 14th. Patient had a fairly good night, takes his food well.  $T. = 99.6^{\circ}$ . Fed by a tube through the mouth.

January 16th. Mouth looking very well.

January 19th. Sutures removed.  $T. = 97.8^{\circ}$ .

January 21st. Water dressings applied. Good union in lower lip. Temperature normal. Patient feels very comfortable.

February 5th. Patient placed under an anæsthetic. Mr. Bloxam dissected off a diamond-shaped flap from the forehead. Margins of the nasal orifice were pared, and the flap turned down and united to the cheek by continuous horse-hair sutures very close together. Nasal aperture was plugged with a small sponge. Mr. Bloxam detached portions of skin around orifice of nose and then turned them up and united them to the forehead flap. The line of the sutures was covered with salicylic wool and collodion. Edges of wound on the forehead were approximated by silver sutures and dressed antiseptically.

February 7th. Skin of a very good colour; no congestion. Patient feels very comfortable.  $T. = 101^{\circ}$  in the evening.

February 8th. Some of the sutures were removed from the forehead. T. = 99.6°.

February 9th. Sutures were removed from the nose this morning. Good union has taken place all round.

February 11th. Nose is looking very well. Temperature normal. Water dressing applied.

February 18th. The wound in forehead is granulating up very well and healing at edges. Patient feeling very comfortable. Wound dressed with zinc ointment.

February 22nd. Wound on forehead is healing rapidly. Temperature normal.

March 21st. Wound is now healed up, and patient discharged.

## COLOTOMY FOR MALIGNANT DISEASE OF THE RECTUM, WITH CONTROL OVER THE ARTIFICIAL ANUS.

By HARRISON CRIPPS, F.R.C.S.

THE patient, a woman, aged 50, was admitted on December 15th, 1885. She dates her illness from the spring, when she first noticed pain in the lower part of the back, and soon afterwards pain during defecation. The frequency of her stools increased, at first being three or four times a day, but latterly much more frequently.

The patient on admission looked weak and anæmic with a feeble pulse. She had constant pain, and was much distressed by a troublesome diarrhœa, having to go to stool as often as ten or twelve times in a night. On examination the anus appeared healthy, and on introducing the finger the mucous membrane for about 3 inches felt smooth and natural. The finger then came in contact with a mass feeling not unlike the cervix uteri. Around this was a *cul de sac*. The mass itself was hard and nodular. The opening through it would scarcely admit the finger-tip, and the bowel was firmly fixed to the surrounding parts.

On February 8th, 1886, colotomy was performed by Mr. Harrison Cripps. The various layers between the skin and the lumbar fascia were purposely not divided on quite the same level. The opening in the fascia was considerably above that in the skin, so that the bowel when drawn out ran obliquely for a short distance between

the skin and the fascia. The wound healed by first intention. No motion passed through it for a week. The patient remained in the Hospital six weeks and improved greatly, being almost free from pain and without diarrhœa.

May, 1887. The patient is not only alive, but much improved, and notwithstanding that the local growth has made some advance her general health and strength is far better than it was a year ago. She is no longer troubled with diarrhœa, but has one good motion daily through the artificial anus, and she has been able during the past year to attend to her domestic duties. The artificial anus readily admits the forefinger, and the mucous membrane is exactly on the level with the skin. There is no sign of cicatricial tissue round the orifice, which is soft and dilatable. The patient knows when she is going to pass a motion, which she has the power of controlling, there being no involuntary escape. In fact, she says she has no more trouble with the artificial anus than when the opening was in the natural situation.

After carefully watching a large number of cases of rectal cancer, in some of which colotomy has been performed, while in others nature has been allowed to take her course, I do not hesitate to pronounce strongly in favour of the operation. The relief to the symptoms is very marked, the constant diarrhœa and tenesmus, which forms so frequent and distressing a complication, being entirely relieved. The downward course of the patient is certainly made far easier, and the miserable termination of life by obstruction or perforation prevented. Moreover, I feel confident that the progress of the growth is retarded in consequence of the bowel acquiring physiological rest by the cessation of its function. So that, apart from life being indirectly prolonged by the relief which colotomy affords to distressing symptoms, I feel confident that the growth itself is often retarded and rendered comparatively quiescent when the rectum is placed at rest by the operation. Colotomy is in no sense a rival operation with that of excision, the former being applicable to cases in which the latter is quite impossible.

The practical question that arises is, as to what period in the course of a case of cancer colotomy should be performed. I advise the operation so soon as the symptoms of stricture become prominent. The troublesome diarrhœa, pain, tenesmus, and blood-stained discharge, owe their origin far more to the retention of

scybala above the contracted part than to the actual disease itself. To wait until the unfortunate sufferer is at death's door, worn out by the constant discharge, or by the actual occurrence of complete obstruction, is not only to have deprived the patient of the benefit of the operation, but to perform it at a time when it becomes a dangerous procedure.

The operation, if performed before the patient is too much reduced in strength, has but little risk; indeed, I can say in my own practice, that I have hitherto had no death as the immediate result of the operation when performed for malignant disease. It is essential if the patient is to derive full benefit from the operation, that care should be taken to prevent the opening from contracting.

It is of great importance, with this view, to get union of the bowel with the skin by first intention, if this occurs there is little or no tendency to contract. On the other hand, if the bowel falls away from the skin, the granulating tissue with which the interval is occupied is nearly sure to contract on healing. I regard it as a great advantage to make the opening through the abdominal walls as valvular as possible, and this is best accomplished by making the incision through the skin considerably lower than that through the fascia. If the opening is made in this way, and care taken during the healing process to prevent contraction, the patient will have little or no difficulty in managing the artificial anus. In the case shown to the Society, the part was perfectly clean, the patient had one motion daily, and had control over the bowel, and was quite able to do her daily household work.

Mr. CARTER agreed entirely with Mr. Cripps' general principle. He himself had in early life operated on several cases with comfort and restitution of usefulness to the patient. One patient, a schoolmaster, returned to work in ten days, having been for some time previously disabled. He had been taking powdered charcoal for some time previous to the operation, which has completely deodorized the air and faecal matter evacuated on incision into the gut. He afterwards wore a padded truss.

Mr. MORGAN asked what means were taken for securing primary union between the mucous membrane and the skin.

Mr. BLOXAM preferred to operate by a two-stage method. He passed the sutures not quite through the mucous membrane to avoid escape of contents, and then opened colon three days later. The edges completely healed by first intention, and the patient walked out of the hospital on the tenth day. He understood that Mr. Cripps always opened the colon at once. The escape of feculent matter often set up cellulitis.

Mr. CRIPPS, in reply, said the two-stage operation had been fully discussed by the Royal Medical and Chirurgical Society. The objection

raised to it was that the tension of the stitches on the gut caused persistent vomiting, only relieved by opening the bowel. He was well satisfied with the old operation. There was little danger provided it was done in time. Get the bowel thoroughly empty for a week before by purgative medicine. The day before operation give opium, which kept the bowel quiet, then one could operate with a thoroughly clean bowel, and avoid the risk of cellulitis from faecal extravasation.

## CASE OF ABDOMINAL TUMOUR.

By ISAMBARD OWEN, M.D.

THE case which I have to bring before the Society to-night is that of a moveable tumour occurring in the abdomen of a married woman aged 26, upon the nature of which I propose to ask the opinion of the Fellows.

The tumour is of the size of a large fist, more or less globular in shape, but somewhat elongated laterally, and flattened in front. It lies in the upper part of the abdomen, almost medially, occupying portions of the epigastric and umbilical regions, and trenching on the hypochondriac and iliac on both sides. The lowest portion sometimes reaches about an inch below the umbilicus, sometimes is on a level with it. This is the usual position when the patient lies in bed and the tumour is at rest; but it varies slightly from time to time.

The tumour appears to lie directly under the abdominal wall, and has never been obscured by stomach or colon. Its surface is not smooth, but irregular. There are no distinct nodules, but a small conical projection may be felt at the lowest part. It is apparently solid, and somewhat elastic. It does not itself pulsate, though at times it transmits the pulsation of the abdominal aorta.

A clear line of percussion can usually be traced between it and the liver, and it has no apparent connection with the spleen. It moves but slightly with respiration.

It is freely moveable by the hand through a considerable range. Directly upwards and downwards, it can be moved for about an inch and a half; laterally, it can be pushed until nearly a third is hidden by the walls of the thorax. Its range of movement on the whole seems greater to the right than to the left, and on the right side it can be pushed backwards farther than on the left.

It appears to have contracted no adhesions.

No particular discomfort seems to be occasioned by handling, unless the tumour is pushed forcibly backwards, when nausea is occasioned; and no hæmaturia has been noticed after manipulation.

Examination of the rest of the abdomen reveals nothing of consequence. At the back, percussion upon one examination gave a greater resonance in the right than in the left lumbar region; and the finger seems to indent this region more easily than its fellow. The heart and lung signs are normal. The urine is clear, acid, of sp. gr. 1020·2; on one occasion it contained a trace of albumen. The skin has not lost its elasticity.

The patient knew nothing of the tumour until June last, when she was attended in the sixth month of her fourth pregnancy by Mr. Herbert E. Powell, of 192, Battersea Park Road. She was then suffering, Mr. Powell informs me, from epigastric pain, vomiting, and constipation of a week's duration, which were relieved by the use of enemata. The tumour was discovered on examination. It was then in the right hypochondrium, extending for 3 inches below the ribs and reaching to the median line. It appeared continuous with the liver.

She was confined in the beginning of October. About a fortnight later, Mr. Powell, attending her for a second attack of pain and sickness, found that the tumour had moved to its present position.

On November 16, she became my out-patient at St. George's Hospital, complaining still of pain in the epigastrium and back, but not of vomiting.

She had, however, an attack of vomiting from the 24th to the 27th.

On December 18th she was admitted into the hospital under my care, and has been under observation since.

Under simple treatment the symptoms have disappeared, and she is now in about her usual state of health. She is still suckling.

She was rather thin when she first came under my care; but since her entrance into the hospital she has rather gained flesh (the treatment included cod-liver oil). I omitted to have her weighed on admission.

I cannot say that the tumour has increased in size since the patient has been under my observation. I can almost be positive

that it has not, though exact measurements have not been easy to make. The small inferior conical projection I did not notice until the 22nd inst.

Dr. Champneys kindly made a pelvic examination on December 2nd, and could discover no connection with the pelvic organs. Dr. Dickinson was good enough to see the patient in consultation with me on December 18th and January 22nd. He believes the tumour to be a floating right kidney. It is not easy to see of what other nature it can be, though the shape is not distinctly that of a kidney, and it bears handling with greater impunity than is usual with those tumours.

I am indebted to Mr. Herbert Powell for his courtesy in giving me the earlier details of the case, and to Mr. Arthur Jervis, my House-physician at St. George's Hospital, for the excellent notes with which he has provided me of the patient's history and condition since admission.

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*February 7th, 1887.*

## PAROTITIS AFTER INJURY OR DISEASE OF THE ABDOMEN OR PELVIS.

By STEPHEN PAGET, F.R.C.S.

AMONG Graves's Clinical Lectures, there is one on the 'Connection between the Diseases of Various Organs.' "You are aware, he says, "that some organs, when labouring under disease, are apt to implicate other organs, giving rise to various deranged conditions, which are developed sometimes simultaneously, but in general consecutively, and in sequence. It is of the greatest importance to study each link in this morbid chain, and to ascertain the nature of its connection, so as to have a distinct conception of the whole." To illustrate his meaning, Graves gives four cases of acute arthritis, followed by jaundice, and this again by urticaria; and three cases where chronic disease of the spleen was followed by superficial ulceration of the legs—a sequence noted long ago by Aretæus. He adds that, if we bear in mind such sequences as these, we may, as he himself did in two cases, "predict the ap-

pearance and form of disease, and inspire the patient with confidence."

But, apart from their clinical interest, these sequences in disease have great pathological interest ; for they demonstrate relations between distant organs which are not visible in health. For example, abscess of the kidney and abscess of the heart are much more common in pyæmia due to acute necrosis than in pyæmia due to amputation. I have collected and arranged some hundreds of cases of pyæmia, and I find that in 18 cases of pyæmia from acute necrosis, 10 had abscess of the heart and 1 had endocarditis, and 11 had abscess or infarction of the kidney. On the other hand, in 140 cases of pyæmia from amputation, only 1 had abscess of the heart, and a few others had slight changes in it, and not one had abscess of the kidney. That is to say, in pyæmia from acute necrosis, abscess of the heart and abscess of the kidney each occur in 61 per cent. of the cases ; but in pyæmia after amputation they occur only in 1 per cent., or even less often than this.

To take another example : abscess of the liver and of the spleen is much more common in those cases of pyæmia where the primary lesion has involved the medulla of bone, than in those where it has involved only the soft parts. Thus, out of 67 cases of pyæmia after injury of the soft parts only, abscess of the liver occurred in 4 cases, and abscess of the spleen in 3. On the other hand, in 217 cases of pyæmia after injury involving the medulla of bone, abscess of the liver occurred in 56 cases, and abscess of the spleen in 28. That is to say, in pyæmia from injury of the soft parts only, abscess of the liver and abscess of the spleen occur in 6 per cent. and in  $4\frac{1}{2}$  per cent. of the cases ; but in pyæmia from injury involving the medulla of bone, they occur in 26 per cent. and in 13 per cent. of the cases.

In this way disease may disclose relations between organs which are latent in health. Physiology is of no help towards discovering them ; we know of nothing that corresponds to them in the healthy body.

There is a great deal to be made out in these matters, and I hope to be able to make a regular study of these morbid sequences, not only in pyæmia, but in other diseases as well ; and I shall be truly grateful to any one who will advise or help me in any way.

To-night, I have the honour of calling the attention of this Society to a sequence of great interest—the inflammation of the

parotid gland which follows injury or disease of the abdomen or pelvis. Of this form of parotitis I have collected 101 cases. Of these 101, 10 were due to injury or disease of the urinary tract, 18 were due to injury or disease of the alimentary canal, and 23 were due to injury or disease of the abdominal wall, the peritoneum, or the pelvic cellular tissue. The remaining 50 were due to injury or disease, or temporary derangement of the generative organs. By "temporary derangement" I mean slight injuries or natural processes—a slight blow on the testicle, the introduction of a pessary, menstruation, and pregnancy.

It is true that parotitis may follow injury or disease of other parts of the body besides the abdomen and pelvis; but, after a long search, I have found only 13 cases of this kind. Moreover, in every one of these 13 cases the parotitis was only part of a true general pyæmia, with other secondary abscesses and effusions like itself.

Again, parotitis may occur in the course of one of the specific fevers, generally toward the end of the disease; thus, of 2,000 typhoid patients in the London Fever Hospital during the years 1870–1885, 13 had parotitis. But out of 7,000 scarlet fever patients in the hospital during the same period, only one had it. Perhaps, so far as the occurrence of parotitis is concerned, typhoid fever may be regarded as a disease of the abdomen.

Again, the parotitis of mumps, with its so-called metastases, chiefly to the generative organs, has many points of resemblance to the parotitis which is the subject of my paper.

But this parotitis which follows injury or disease of the abdomen or pelvis, though it is in some ways allied to those forms of parotitis which I have mentioned, is in other ways different from all of them.

It is not, as a rule, accompanied by signs of septicæmia or pyæmia. Thus, out of 101 cases, there are only 15 where mention is made of "septic symptoms," or "septicæmia," or "pyæmia." Even if we add to these 15 cases as many more where septicæmia or pyæmia may have been present, though nothing was said about them, there still remain many cases where there was not any trace of septicæmia or pyæmia. There are also a few cases which are directly contrary to any such explanation of this form of parotitis.

Out of all the 101 cases, there are only 7 in which it is recorded that other secondary lesions, such as abscesses in the lungs or kid-

neys, were present. And, among these 7, there is not, so far as I can find, a single case where the pyæmia attacked any of the joints. That is to say, parotitis, when it follows injury or disease of the abdomen or pelvis, is in 93 per cent. of the cases a solitary event, unaccompanied by any other lesion like itself. We have seen that parotitis after injury or disease of other parts of the body is never isolated in this way, but is always part and parcel of a true general pyæmia, with abscesses and effusions into the joints. This isolation of the parotitis which follows abdominal or pelvic injury or disease, suggests that it cannot, at least in most cases, be due to any ordinary form of pyæmia.

Out of the 101 cases, 37 died. But, out of these 37 who died, 3 were over 80 years old, 3 had internal cancer, 2 had perforation of the bowel, 2 had strangulated hernia, 7 had undergone severe or even very severe operations, involving abdominal section, and 13 died of septicæmia or pyæmia. If we add to these deaths 1 from infantile syphilis, 1 from marasmus, and 1 from heart-disease, we shall see that these patients died, not from their parotitis, but more from the primary lesion, or from some form of blood-poisoning after it. Thus it is not possible to say how far this form of parotitis is in itself dangerous ; the danger lies not in it, but in the primary lesion.

This form of parotitis does not appear to have any settled period of incubation. Thus, out of 27 cases where it followed ovariotomy or oophorectomy, the date of its invasion is given in 18 cases. In 3 of these it occurred on the third day after the operation, in 3 on the fourth, 4 on the sixth, 2 on the seventh, 1 on the eighth, 2 on the ninth, 2 on the eleventh, and 1 on the twelfth.

Out of 12 cases where it followed gastrostomy, herniotomy, and similar operations, the date of its invasion is given in 7 cases. In 1 it occurred on the third day after the operation, in 2 on the sixth, 1 on the seventh, 1 on the ninth, and 2 on the tenth.

Out of 8 cases where it followed delivery or abortion, the date of its invasion is given in 7 cases. In 1 it occurred on the fifth day, in 1 on the eighth, 1 on the ninth, 2 on the twelfth, 1 on the thirteenth, and 1 on the nineteenth.

To these cases may be added one where it occurred on the very next day after a man had been sounded for stone ; and one case,

most perplexing of all, where it occurred on the morning of the day fixed for operation.

Whatever may be the explanation of this last case, it is clear that this form of parotitis has no fixed period of incubation. It would only be misleading to say that it occurs, *on an average*, on the seventh day after ovariotomy, or on the tenth day after parturition. But it is worth observing that, when it occurs after parturition, it comes later, as a rule, than when it follows any form of operative interference with the generative organs.

The onset of this form of parotitis varies much, as regards the general health. As a rule, there is no marked disturbance of it, no rigors, no high fever. Thus, in most of the cases of parotitis after ovariotomy, where any rise of temperature is mentioned, it is expressly said to be "slight" or "not marked." In some, indeed, there seems to have been none at first; though, naturally, there is some feverishness during the course of the inflammation. However, this is not, as a rule, severe; so that when a German surgeon says he treated a case of parotitis, which followed an operation for faecal fistula, with parenchymatous injections of carbolic acid, and in this way kept down the patient's temperature from rising above 101°, we may fairly decline to agree with him. On the other hand, in some cases the onset of the parotitis was marked by great disturbance of the general health, with high fever. In four cases rigors are recorded, and only in four. Of these, two were old men, aged 80 and 85, with urinary diseases; and two were women who died of pyæmia after complicated labours. In a case of parotitis after pelvis hæmatocoele, there was "high fever, with great prostration;" and in two cases of parotitis after peritonitis, the inflammation attacked both glands, and there was "high fever, with delirium," though it was especially noted there were no signs of pyæmia. In a case of parotitis after herniotomy, there was great restlessness, with refusal of food, for two days before the parotid swelled, and violent delirium at the time of its swelling. And in two cases of parotitis after child-birth, there was also puerperal mania. But, in the majority of cases, this form of parotitis comes on without any serious derangement of the system. It is of such cases that Dr. Macdonald speaks, in an account of two cases of parotitis after ovariotomy. "In neither of these cases," he says, "was there temperature or other symptoms to lend the least colour to the opinion that the parotid inflammation was septic. It merely

complicated the convalescence a little by the pain and concomitant slight degree of fever it induced." In the same way, Dr. Goodell, of Philadelphia, says of a similar case: "Convalescence was retarded by great and painful swelling of both parotid glands, without any marked rise in the temperature, without acceleration of pulse, and without suppuration. There was not present the slightest evidence of septicæmia." And it would be easy to quote many other similar observations. Moreover, there are several cases in which—if I may use an old phrase—the parotitis is critical, not symptomatic; cases where it occurs toward the end of the primary lesion, disappears in a few days, and is at once followed by rapid recovery.

It does not seem to attack one gland more than the other. It sometimes attacks both; thus, out of 25 cases of parotitis after ovariotomy, both glands were attacked in 9 of them; while, in 3 of these 25 cases, the submaxillary and sublingual glands of the same side as the parotid suffered as well as the parotid, or instead of it. This double form of parotitis, and this implication of the submaxillary and sublingual glands, seem to me to be more common after ovariotomy than after other abdominal or pelvic lesions. The sweating of the skin over the parotid, which is not uncommon in cases of salivary fistula, or stricture or obstruction of the parotid duct, does not seem ever to occur in the cases which we are now considering.

As regards the termination of this parotitis, whether by resolution or by suppuration, the figures are as follows: Out of 78 cases, which give information on this point, 45 supplicated, and 33 were resolved without suppuration. And now comes a curious fact: out of the 45 that supplicated, 24 died; but out of the 33 which were resolved without suppuration, only one died, and she died of cancer. But the suppuration of the parotid was not the cause of death in the 24 who died; they died of the primary injury or disease, as I have said, some being over 80 years old, others being the victims of malignant disease, or perforation of the bowel, or acute peritonitis, or septicæmia, or pyæmia. If the expression may be allowed, they did not die because their parotitis went on to suppuration, but their parotitis went on to suppuration because they were going to die.

As regards the fact that, in those who had septicæmia or pyæmia, the parotitis always went on to suppuration, such cases

are perhaps parallel to those cases of pyæmia after compound fracture, where suppuration has occurred around simple fractures which had been inflicted at the same time as the compound fracture. Experimentally, the same thing has been shown by Chauveau, Loeffler, and others, who produced simple fractures in animals, then introduced septic fluid into their veins, and thus produced suppuration round the simple fractures.

The pus generally breaks its way into the meatus, or into the mouth; and it may do this in spite of being let out by a timely incision. It may also burrow backward over the mastoid process, or down the neck, making counter-openings necessary. Belladonna and poultices give relief; but the old rule is universally observed, "*Parotitides omnes ante maturitatem aperiendæ*," and very great relief may be given, even when no pus is found.

Through the kindness of Mr. K. Thornton, I made a post-mortem examination in the case of a woman, who died with parotitis ten days after the removal of a large sarcomatous growth from the mesentery. The operation was one of great severity, and she never thoroughly rallied from it. The parotitis set in three days before death, without any violent inflammation.

Post-mortem examination, seven hours after death. No rigidity of limbs or of neck; but the jaws were firmly clenched, and could not be opened. Abdomen flat; operation wound healed. In the left parotid region, a firm non-fluctuating enlargement; the œdema, which existed during life, had disappeared. The mucous membrane of the mouth was soft, clean, and free from sordes or ulceration. Pus welled freely from the mouth of the duct, when pressure was made over the gland; there were one or two minute points of hæmorrhage under the mucous membrane at the mouth of the duct. A bristle passed freely up it. The loose areolar tissue over the gland and in the anterior triangle of the neck was œdematos; the lymphatic glands at the angle of the jaw and in the neck were enlarged and soft. The parotid, on section, was found evenly and in every part infiltrated, not with pus, but with reddish, slightly turbid fluid, so that it looked not unlike a section of spleen. There was no abscess anywhere; but just in the proximal end of the duct, where it leaves the gland, lay two or three drops of healthy pus, and a tiny calculus, not bigger than a millet-seed. The microscope showed the lymph-spaces round the acini invaded by masses of small round cells; the acini themselves

were separated, confused, and breaking up; and here and there were seen ducts filled with the same small round cells as were infiltrated among the acini. The interlobular septa of fibrous tissue were for the most part unaltered, and free from cell-proliferation; it was a true inflammation of the secreting elements themselves.

With regard to the presence of micro-organisms in this form of parotitis, Rosenbach had a case of parotitis after the operation for strangulated hernia. The man died of "acute septic peritonitis," and Rosenbach made cultivations both from the blood of the arm and from the purulent fluid infiltrating the parotid. The cultivation made from the blood remained sterile, but from the parotid he got large numbers of colonies of *staphylococcus pyogenes aureus*. This, however, is the commonest of all the micro-organisms found in acute suppurations, and has no specific value.

In conclusion, I venture to suggest a view of this form of parotitis which seems to me in accordance with the evidence. We have seen that this parotitis after injury or disease of the abdomen or pelvis is in many ways a peculiar lesion. So far from being due to pyæmia, it was, in 93 cases out of 101, an isolated lesion, unaccompanied by any other inflammation like itself. So far from being developed at a regular interval after the infliction of the primary injury, we have seen that it has no fixed period of incubation, and runs no regular course. Its invasion is not marked, as a rule, by rigors or by any great rise of temperature; indeed, it seems in many cases to be what old writers called a "critical" inflammation. It may subside, and swell up, and subside again; or may recur with each successive pregnancy or menstruation. Out of thirty-three cases, where it was resolved without suppuration, only one died; and that was a woman with cancer of the sigmoid flexure, who died of the local disease a month after colotomy.

These facts make it impossible for us to say that this form of parotitis is due to any ordinary form of septicæmia or pyæmia.

Next, it is not due to inflammation extending from a parched and sordid mouth up the parotid duct into the substance of the gland. Many of the cases cannot possibly be brought under this theory. Again, the *socia parotidis*, which lies so near the mouth, was only affected once or twice in all the 101 cases. Again, the mouths of patients with abdominal or pelvic lesions are not, as a

rule, more parched than the mouths of other patients. This theory could explain only a few of the cases; nor is it supported by any real evidence.

Nor is it due merely to inflammation of the lymphatic tissue which is in the substance of the gland. Even if this tissue were inflamed early, or before the rest of the gland, the clinical features of these cases prevent us from classing them as mere swellings of lymphatic glands.

Admitting that the general condition of the patient, especially in cases of septicæmia and pyæmia, is concerned in the production of this form of parotitis, must we not also take into consideration the reflex action of the nervous system? The influence, both direct and reflex, of the nervous system upon the salivary glands is shown in countless ways, both in health and in disease. Thus, if a loop of intestine be drawn out from the abdomen of a dog, the action of the gustatory nerve is inhibited, and the secretion of saliva is diminished or arrested, until the loop of intestine is put back.

Now, if we find one and the same lesion followed by salivation in one patient, by arrest of the salivary secretion in another, and by swelling of the salivary glands in a third, must we not conclude that these results are only different workings of the same agent?

For example, gastritis may be followed either by salivation, or by arrest of saliva, or by parotitis. So, too, parotitis may follow gastric ulcer, gastrostomy (2 cases), duodenal ulcer, enterostomy (3 cases), hepatic abscess, removal of umbilical or abdominal tumours (4 cases), operation for strangulated hernia (6 cases), perityphlitis (5 cases), cancer of the liver or intestine (2 cases), colotomy, penetrating wound of the abdomen, and acute peritonitis (8 cases). It has also followed division of stricture of the rectum, and operation for haemorrhoids; and with these two last cases may be compared the fact that salivation has been observed as an early symptom of cancer of the rectum.

To take another example. Derangement of the generative organs, like derangement of the alimentary canal, may cause either salivation, or absence of saliva, or swelling of the salivary glands. The salivation of pregnant women, and their longings for sapid food, are well known. Dr. Goodell gives two cases—one of repeated salivation at each menstrual period; the other, of a lady with a painful left ovary, in whom the left parotid did not secrete

during her menstrual periods, so that that side of the mouth remained dry and painful. Must not parotitis, under similar circumstances, have a similar cause? Parotitis has followed various slight injuries, or temporary derangements of the generative organs, in 5 cases; it has been known to accompany each successive pregnancy, to replace or accompany the menstrual flow (2 cases), and to occur after the menopause (2 cases). It has followed delivery or abortion in 8 cases, pelvic cellulitis or pelvic hæmatocele in 3, operations on the vagina or uterus in 8, and ovariotomy or oophorectomy in 27.

As regards parotitis after injury or disease of the urinary passages, it has followed the use of the catheter (3 cases); the use of the sound, renal abscess, and chronic cystitis (5 cases).

It is certain that, in many of these cases, there was neither septicæmia nor pyæmia, nor anything of the kind. Must we not, therefore, assume, in some of them, the influence of the nervous system as at least part of the cause?

This influence of the nervous system is the more probable, if we consider how often retention or suppression of urine follows abdominal or pelvic operations; here the influence of the nervous system cannot be doubted. Again, attention has lately been drawn to the fact that in many cases of disease of the thoracic or abdominal viscera, there is inequality of the pupils; they differ not only in size, but also in their susceptibility to light; and this difference between them may change as the disease goes on. This inequality of pupils is, it is said, most often found in those diseases which not only affect the system generally, but which, like pneumonia, pleurisy, and hepatic and renal colic, are also definitely localised.

In the same way, with regard to parotitis after abdominal or pelvic lesions, we may admit that the general condition of the patient may help to cause it, without denying the local influence of the reflex nervous system.

Finally, it seems probable that this change brought about in the gland is not a spasmotic closure of the duct, such as Verneuil describes, but some change in the gland itself—not a retention, but a suppression. Retention of saliva, as shown by many cases collected by M. Terrier, causes a mere passive dilatation of the gland, which varies in a transient fashion with every meal, never suppurates, is never accompanied by disturbance of the general

health, and vanishes when a probe or a catheter is passed up the duct.

Perhaps this parotitis may be due, as Mr. Knaggs, of Huddersfield, has suggested, to a reaction consequent on long-continued constriction of the arteries of the gland. But here I will take to heart the warning given by Graves in the Clinical Lecture already quoted. "I shall leave the *explanation*," he says, "to my juniors, who always explain matters, according to my observation, much more readily than their seniors."

*Note.*—It may be observed that Dr. Gowers, in his work on 'Diseases of the Nervous System,' chap. i, p. 22, gives a case where the patient, "thirteen days after a stab-wound in the abdomen, which healed well, had an attack of parotitis, with facial palsy; on the fortieth day there developed paralysis of the tongue, vocal cords, and limbs; and on the sixth day after the onset of these symptoms he died from respiratory palsy. Extensive peripheral neuritis was the only nerve-lesion."

Mr. CARTER trusted that an instructive discussion would follow on these mysterious alliances which were of practical interest to all.

Mr. ALBAN DORAN admitted that he was suffering from an attack of intellectual dyspepsia, for he could hardly digest the mass of facts he had heard. He would discuss the causes of parotitis in these cases under three heads: simple reflex action, local septic infection, and constitutional debility with patency of orifice of duct from dryness of mouth. It was important to note that in some cases where parotitis had followed abdominal operations, there had been suppuration along the tracks of the stitches.

Mr. MEREDITH inquired whether, in parotitis affecting only one side after ovariotomy, it generally occurred in the same side as the removed ovary. In the only case he had had, the parotitis supervened on the 8th day after the stitches had been removed and the bowels had been open. It came on rapidly and subsided in forty-eight hours. The operation was on the right ovary, the parotitis was on the left side.

Mr. STEPHEN PAGET, in reply, thought that both reflex action and the constitutional condition of the patient played a part in the production of these cases. In the majority of the cases recorded, the surgeons did not mention on which side the gland was inflamed.

## ON PARTIAL ENTEROCELE.

By EDMUND OWEN, F.R.C.S.

THE term here used to describe the hernia which was the cause of the symptoms in the following case, is one which will probably find general acceptance. If our readers will refer to the

report of the meetings at which the papers referred to (*vide infra* and page 314) were discussed, they will gain much information on the subject of this form of protrusion.

On November 30th, 1886, a spare man, aged 57 years, was admitted with a strangulated femoral hernia on the left side, of the size of a large walnut. He vomited a good deal, but the ejecta had no stercoraceous odour; there was no tympanites and no hiccup, but the man was somewhat collapsed. He said that the hernia had been down generally during the past three winters, when his cough was bad, but that nearly the whole of it went away when the mild weather arrived; that there was, however, at the best of times, always a very small piece which did not go back. He said further that the hernia, in the larger mass, had been down for nearly a week, that for five days his bowels had not acted, and during that time he had been frequently sick, and in pain across the umbilicus. Without any difficulty Mr. Lloyd, the house-surgeon, returned the chief part of the protrusion, and then applied an ice-bag to the small piece which resisted his efforts.

Mr. Owen saw the patient some hours after his admission, and finding him free of pain and nausea, and learning that the general improvement, which set in directly after the partial reduction of the hernia, was as real as it was apparent, he decided not to cut down upon the irreducible piece, which he took to be a nodule of omentum. That decision was justified; all went well; the bowels acted nearly every day; but still the small piece remained irreducible. On the tenth day in hospital the hernia began to pain, and the ice was entirely left off; and a week later an abscess was incised over the seat of the hernia, pus and faeces escaping. After this the local pain entirely passed away, but for some weeks a faecal fistula kept on discharging. The opening eventually closed; the remnant of the hernia has disappeared, and the man is quite well, at any rate so far as his groin is concerned.

Littre gave various important indications for recognising strangulation of a diverticulum, or of a piece of the side of the intestine, all of which are illustrated in the case just recorded. Thus: The bowels continued to act during the progress of the attack, because the channel itself was not obstructed. The bowels were confined whilst the supplemental hernia was strangulated, but they began to again to act directly that part was released, although the diverticulum, or the small piece of the side of the bowel,

remained so tightly strangulated that it sloughed. The man had no hiccup or abdominal distension, nor did he vomit except on one occasion—that was before the chief mass was reduced. The permanent prolapse was particularly small, and though it was persistently and tightly pinched, the general and local symptoms ran an unusually mild course.

The small irreducible part of this strangulated hernia was, without doubt, intestinal, for on the occurrence of gangrene and abscess faeces escaped when the tumour was incised. That the strangulation did not implicate the entire circumference of the intestine is evidenced by the fact that from the very day that the chief part of the strangulated mass was returned, the bowels began again, and continued, to act naturally. Possibly, the piece of bowel which sloughed was Meckel's diverticulum, or an adventitious diverticulum; possibly it was a piece of the side of the bowel. But that this particular feature in the case remained obscure, is probably much to the advantage of the man himself. Mr. Owen said he was not of opinion that a clinical history is complete only when a necropsy is detailed.

On April 19th, 1886, Mr. Morgan read a paper on a case of strangulated hernia without complete obstruction of the bowel before the Medical Society of London,\* and on December 14th last Mr. Treves chose the same subject for a communication to the Medico-Chirurgical Society,† and on each occasion, reference was made to an essay which was read by Littre in 1700 at the Académie Royale des Sciences, in which the author described a fatal case of hernia which was probably strangulation of Meckel's diverticulum. By Littre's hernia, however, one now generally understands a partial hernia of the circumference of the bowel, rather than of a diverticulum. But on this matter opinions differ; and with some surgeons the name of Richter is usually associated with that condition; Littre's name being connected with diverticular protrusions. Thus what should be a tolerably simple subject has become overburdened with proper names, and terminology has become indefinite. Mr. Owen ventured to express the opinion, therefore, that in the interest of surgical literature in general, and of the student in particular, it is expedient that individual names be not associated with special kinds of hernia. The surgical archæologist

\* 'The Lancet,' vol. i, 1886, p. 786.

† *Ibid.*, vol. ii, 1886, p. 1176.

may dissent from this proposition, but specialism in any branch of knowledge should tend always to simplification. Indeed, in the discussion of one of the excellent papers just referred to, Mr. Hulke is reported\* as saying that he rather thought that Richter himself did not fully comprehend the matter with which his name is so honourably mentioned. Every surgical reader, however, can understand what is meant by a "lateral hernia of the bowel," and by a "hernia of a diverticulum." The former term, therefore, or the still more comprehensive one, "partial enterocele," is preferred by Mr. Owen as the heading to this report.

Mr. CARTER, referring to the ways of spelling Littre, said the French were not alone in deviations of this kind. As with Mr. Weller, senior, much depended on the taste and fancy of the speller. He objected to the name Richter's hernia; nothing in the world proved so embarrassing to a student as to have to remember proper names in connection with diseases and symptoms. He wished that common consent could be obtained to the abandonment of "ticketing" diseases in this way.

Dr. C. J. HARE said that the nomenclature of diseases, as issued by the College of Physicians, went far in the direction the President had indicated. If the President or the author of the paper wrote to the Registrar on the subject, a further step might be taken. It would be of great advantage if medical men would consult that book before writing the headings of their papers. It would be well to have one standard, and as the Colleges of Surgeons and Physicians were acting together in educating students, so they might also in naming diseases.

Mr. TREVES said that all surgeons would congratulate Mr. Owen on the result of his case. The only evidence on which the diagnosis of partial enterocele was founded, seemed to be the absence of strangulation and the formation of a faecal fistula which healed up. If any patient had mild symptoms, and if a fistula resulted and healed, some surgeons would call the case one of partial enterocele. Diverticular hernia were very rare in the left side and in the femoral region. He thought the symptoms only to a slight extent bore out the diagnosis of partial enterocele. He would like to discuss the question of the influence of an ice-bag in producing abscesses. He had seen cases of hernia at the London Hospital treated in widely different ways, by application of cold, of poultices, and by administration of croton oil; he had more than once seen the prolonged use of the ice-bag cause abscess, and he had entirely discontinued it in his own practice. With regard to nomenclature, Littre had never seen a case, and he lived and died in perfect ignorance of the condition now saddled with his name. The term partial enterocele, and its German and French equivalents were all vague, and that was the reason why with every possible apology he had called it Richter's hernia. He disagreed entirely with Mr. Hulke as to Richter's want of knowledge concerning these ruptures; he was the first to describe it accurately, and in his work had devoted a special chapter to the subject. In the absence of any definite English title, he had introduced Richter's name in connection with it.

\* 'The Lancet,' vol. ii, 1886, p. 1177.

Mr. STEPHEN PAGET referred to a case under the care of Mr. T. Smith of a lady who had incarcerated hernia. An ice-bag was applied, and kept on for some days. It was ultimately perfectly reduced, but an abscess formed, which opened of itself, and was of a non-faecal character.

Mr. PYE said that it was without doubt a dangerous remedy, and one that must be used with great caution. Mr. Treves had raised a difficult question in diagnosis when he referred to the relation of the abscess to the ice-bag. He thought the phrase "lateral hernia" unjustifiable and quite barren of meaning.

Mr. DAVIES-COLLEY could not understand Mr. Treves' objection to the term "partial enterocele." What evidence was there that this was not an ordinary femoral hernia injured at the portion of its neck resting on Gimbernat's ligament, an abscess forming in the crural canal, and finally discharging itself externally.

Mr. MORGAN asked whether there was any indication of the portion of bowel that had been included in the neck of the sac. He was quite in accord with previous speakers who objected to giving proper names to diseases, but there was often considerable difficulty in giving other names; one could not perhaps say what was the exact structural mischief, so one saddled the lesion with the surgeon's name.

Mr. BLACK asked if anyone from past experience could tell him whether iced applications in cases of peritonitis increased the shock.

Mr. OWEN, in reply, thanked Messrs. Carter and Hare for their remarks on the terminology. The man came in with a small hernia, which for eighteen days remained quiet, with motions passing all the time. The man liked the ice, the house-surgeon was pleased with it, and so he did not interfere, but when the patient found it uncomfortable it was left off. He thought the case was one of partial obstruction because of the two sets of symptoms, and he regarded the ileum as the seat of lesion, because of the large piece that came down and the character of the faeces. The part engaged was that opposite to the mesenteric attachment. He thought a large ice-bag over the whole abdomen would increase the shock in peritonitis.

## RUPTURE OF ANEURYSM INTO PERICARDIAL CAVITY.

By T. F. HUGH SMITH, F.R.C.S.

S. C., aged 42, a rag-cutter at a paper-mill, died suddenly on November 25th, 1886. She continued to work up till the time of her death.

The symptoms complained of were dyspnoea on exertion, and occasional attacks of pain in the region of the heart.

On two occasions only during the past two years did she seek medical advice, namely in March, 1885, and in the same month of the following year.

Bronchial catarrh was the affection for which she sought relief,

and examination of the chest revealed dulness over the upper third of left side, together with bronchial breathing.

At the post-mortem examination, the lungs were found collapsed and the pericardium bulging. Upon opening the latter, it was found to contain 15 ounces of fluid and clotted blood, which had entered the cavity through a rent  $\frac{3}{4}$ -inch in length, near the right auricle.

The opening was found to communicate with a saccular aneurysm springing from the descending portion of the arch of the aorta.

A considerable amount of fibrine had been deposited in the saccular portion of the aneurysm; the first and second portions of the arch were greatly dilated and studded with calcareous plates.

Judging from the previous history of the deceased, the arterial disease was most probably of syphilitic origin.

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*February 14th, 1887.*

## A REPORT OF TWO SUCCESSFUL OPERATIONS FOR CANCEROUS TUMOURS UPON THE SUPERIOR MAXILLARIES.

By LEOPOLD SERVAIS, M.D.

FEW pathological questions have more occupied the attention of authors, and invited their learned inquiries, than those which concern the affections of the superior maxillary. It would be impossible to get through them all. I must, therefore, in this monograph content myself with noticing those latest researches in science with regard to it which have practical value.

The superior maxillary bones are two hollow bones, together forming the upper jaw. Each bone consists of four processes, and a body which possesses a large cavity, the antrum of Highmore. This antrum is characteristic of these bones, and opens in the middle meatus of the nose by an aperture which is very small in the recent subject, admitting only a small probe; its walls are very thin, and are covered internally by a mucous membrane. The

body has four surfaces—the facial externally, the zygomatic posteriorly, the orbital superiorly, and an internal surface forming part of the outer wall of the nose and the cavity of the mouth.

There are four processes—(a) the malar, which articulates with the malar bone by a rough surface; (b) the nasal, which articulates upwards with the nasal bones, and posteriorly with the lachrymal bones; (c) the alveolar, which has sockets for eight teeth in the adult and five in childhood; (d) the palate process forms part of the floor of the nasal cavity and the roof of the mouth; it articulates with the vomer, the palate bone, and with the fellow process.

The superior maxillary articulates with nine bones—the frontal, ethmoid, vomer, nasal, lachrymal, malar, palate, inferior turbinate, and opposite maxillary. It develops by four centres: 1. For the facial and nasal parts; 2. For the orbital and malar; 3. For the incisive; 4. For the palate portion.

The superior maxillary differs from the other bones of the skeleton by the presence in it of a pyramidal cavity whose base is turned towards the nasal fossa, and whose summit corresponds with the malar bone (Heath). This cavity, narrow in youth, is clothed by a diverticulum of the mucous membrane. This sinus occupies the body of the bone, and in a healthy state communicates with the nasal fossa by a narrow orifice. The presence of this cavity does not in any way modify the essential character of those complaints of which the superior maxillary is sometimes the seat (Heath). The affections to which this cavity is liable are simple and exempt from practical difficulties (Garretson). One may class the affections special to the superior maxillary under the following heads:—Abscesses; Cysts; and Tumours of various kinds.

It is with these last that we are about to occupy ourselves. It might seem at first sight that the physiological fact of the implantation of teeth upon these bones should modify their pathology, compared with those of the other bones of the skeleton—but it is rare that dental diseases, common as they are, affect the bones which support the teeth. It is probable that no genuine neoplastic tumour has ever owed its origin to a dental complication (Fergusson). Professor Fergusson observes that the extraction of the teeth does not appear to influence the progress of a tumour, as one might be tempted to suppose.

The pathology of the maxillaries is the same as that of the other

bones of the skeleton, and the same rules ought to govern the treatment of the tumours of which they are the seat (Fergusson). One is no more justified in sacrificing the whole of a maxillary because it is the seat of a tumour which only occupies part of it, than one is justified in taking off the whole of an arm on account of an affection of the hand or even of the scapula. There is always time enough for such extreme measures. But yet the surgeon should not hesitate to cut a cancerous tumour from the superior maxillary any more than from another part of the body, in the hope, if not of curing, at least of warding off functional inconveniences, and, above all, of assuaging. This last motive will be the most frequent guide (Heath).

By the word tumour, from *tumeo*, I swell, we understand every increase in volume, whether that increase be in connection with the normal anatomy and physiology of the region where the swelling appears, or whether it be the result of a pathological cause, and so reveals a direct and constitutional origin.

The surgeon studies the means of combatting the tumours which present themselves to his investigation, while the physiologist studies their essential character and their composition.

From a clinical point of view we may range tumours in two great classes—those whose explanation is to be found in the parts which support them, or in the functions proper to them, such as a sebaceous tumour, a ranula, a hernia.

The second class comprises all the others, that is to say, those whose presence is not explained by the anatomy of the parts which support them, or by the functions which are their seat—such as nodules of syphilis, a tubercle, or the numerous expressions of cancer (Garretson). All the tumours of the first class are mild; all the others indicate a dyscrasia.

Tumours of the first class, or those whose existence is explained by the place where they are met, only require a local treatment. The others require a treatment directed against the vice to which they owe their appearance, accompanied by a local treatment, in order to avoid the inconveniences due to their presence.

Tumours that have no history are cancers. So far it has been impossible to decide exactly what is a cancer, but it is at least necessary for the modern surgeon to know what is *not* a cancer; if he does not, then woe to the patient who is under his guidance, and who confides his existence to him.

We offer some clinical considerations calculated to aid the surgeon in forming his diagnosis:—

1stly. Homologous tumours tend to isolate themselves and to preserve their special characters, while the malignant tumours invade the neighbouring tissues or betray a tendency in that direction.

2ndly. Homologous tumours increase regularly, and when they have reached a certain volume either rest stationary or begin to suppurate—their treatment is purely local. Heterologous tumours behave in quite a different manner; they have a pronounced tendency to reappear; there are two means of resisting them,—

- (a.) By combatting the vice whose existence they reveal.
- (b.) By rendering the constitution unsympathetic to their invasion.

3rdly. Homologous tumours are generally solitary, or, if they are multiple, they all appear in the same tissue. Heterologous tumours, on the contrary, appear in different parts of the economy, and in nowise respect the limits of the tissues.

4thly. Homologous tumours cause pain in the region which supports them, while malignant tumours have a special and characteristic way of expressing pain.

Tumours of the superior maxillary take, as a rule, their birth in the sub-periostal connective tissue of the antrum of Highmore; they often invade, and at times efface it. Nothing, however, can give an idea of the persistence which this cavity shows in resisting every means of destruction (Garretson).

The causes of these tumours are unknown. They may also take their rise in the alveolar perioste, rarely in the bony tissue itself.

From the histological point of view, one may divide tumours of the upper maxillary in the following manner:—Carcinoma; sarcoma; osteoma; cystoma; fibroma; enchondroma; gelatinoid polyps; melanotic sarcoma and carcinoma; angioma.

These varied denominations, which owe their origin to the resemblance of those tumours with bodies of which these denominations recall the external features, have practically only a very secondary importance, for each one of them represents both a mild and a malignant tumour. The clinic alone in the present state of our knowledge is able to enlighten us as to their real nature, and it will find the elements of a good diagnosis in the state, the progress,

and tendencies of the tumour, and the general manner in which it conducts itself.

As to their frequency, among 307 cases analysed by O. Weber, there were found—133 carcinoma; 34 sarcoma; 32 osteoma; 20 cystoma; 17 fibroma; 7 enchondroma; 7 gelatinoid polyps; 5 melanotic sarcoma and carcinomata; 1 angeioma.

This author observes that the sarcoma has often been confounded with the carcinomata, the first of these tumours being by far the most frequent. Seventy years ago, operations performed upon these bones were rare occurrences, and their total or partial extirpation conveyed the idea rather of an essay than of a systematic operation.

At still earlier epochs daring surgeons undertook these operations; among them Arcolothus, a surgeon of Breslau, in 1693, while the first operation since then was performed by Jameson, a surgeon of Baltimore, in 1820. During this long interval little or nothing was done to help the unhappy creatures afflicted with this disease; and, for the same reason, during this epoch it was not rare to see formidable tumours invade the face and vegetate there, without being troubled in their evolution. Exhaustion and a miserable death were their ordinary consequence. They often produced such monstrous developments as to necessitate the isolation of the patient (Vidal). It was Gensoul, in France, but above all, Lizars, of Edinburgh, who in 1827 courageously set to work, demonstrated the utility of these operations, and rendered them classical.

Thanks to the labours of such men as Gensoul, Dupuytren, Dieffenbach, Fergusson, and Heath, in Europe; Rogers, Gross, Pancoast, and Garretson, in the United States, one only meets in one's practice at more or less remote intervals those hideous types which are still depicted in our most recent surgical works, and which seem by their bulk and extent to defy any useful intervention. Each of these first operators displayed within its limits a surprising ability, and gave proof of astonishing dexterity; and from this double point of view they will never be surpassed. Believing that he could better by this means surround the evil and prevent its return, Gensoul made a principle of attacking the bones by their four main points of attachment to the skeleton, and his followers used almost exclusively the gouge and the mallet.

To Fergusson, a surgeon of the United Kingdom, falls the honour of having modified the manual system of attack in the extirpation of tumours whose seat is in the maxillaries. He was struck by the often useless sacrifice to which the patients had to submit in being deprived of the bony parts, which in the greatest number of cases remained healthy; as, for example, the malar bone, which was sacrificed in cutting the zygomatic arch; the base of the orbit; the orbital border; the nasal processes of the upper maxillary bone; and, in general, the hardest parts of the bones, which, for that reason, the disease generally respects.

This leader of English surgery proposed reversing the rules of operation traced by Gensoul, and of employing a system of preservative surgery. In order to do so he undertook to attack the evil from its centre, and of thus betaking himself from the centre to the circumference. "Remove what is diseased, but leave what is healthy," was the maxim of this great innovator. Was he not right? When one thinks of the great reduction of danger to which the patient is exposed; the points of support which are preserved in order to support the flaps of skin ready to collapse; and finally in the liberty which remains to the surgeon of arresting his action should he perceive, in the course of his operation, that the disease, having made more progress than he had foreseen, it would have been foolhardy to operate further with the knife or the cautery; for, be it observed, tumours even of a mild nature may at times by their development, or by compression, penetrate into the cranium. The diagnosis may offer inextricable difficulties, and Fergusson confesses that he himself has been sometimes deceived in his calculations.

As for the probability of return, it would no longer be a subject of fear, the recurrence appearing not in the hard parts of the bones, but in the soft parts which surround them, and which are always easy to scrape or destroy.

Full of confidence in these theories, the English surgeon endowed the instrumental part of his art with tools capable of attaining the required objects, such as his lion-toothed forceps, and his elegant and practical cutting-forceps, moulded upon the region they are meant to attack. And, as in operations upon the face, it is a matter of some importance to preserve the features, he advises the reduction of the incisions of Gensoul and Dupuytren, and the substitution for them of vertical incisions

agreeing as nearly as possible with the mesian line, and the masolabial groove.

Guided by these precepts of Fergusson, I decided to operate the extirpation of a considerable tumour, existing on the face of G. V. C., aged 9 years, and born and living at Wouwo, Holland.

It was on the 10th October, 1883, that I undertook this operation. The patient's constitution was good, but he had haemorrhage, which would soon have produced a catastrophe. The tumour, which affected the little patient's face, had unequally invaded the two superior maxillary bones. This gave the patient a strange and repulsive appearance; one would have said, at first sight, that it was the highly-enlarged tongue which hung out of the mouth.

The tumour when more closely examined, and when the patient let fall the inferior maxillary, had a lengthened form, and filled the whole of the mouth, under the form of a full, rough-surfaced pear; its colour was a bluish-red, and its surface was over-run in every direction by a network of thick vessels gorged with arteriosavenous blood. One might have confounded it with an erectile tumour; its length was 19 cm., and its circumference 23 cm.

The tumour, which had developed principally at the expense of the right superior maxillary, and which had thrown the other forward, while partially invading it, and exhausting it by compression, had also acted upon the inferior maxillary; all the teeth were horizontally crushed forward and outward. The right nasal cavity was invaded; that of the left effaced. On the right side, the nasal process of the maxillary bone, the orbitary border, and the malar bone were strongly upraised and thrown forward, the right turbinate palate bone was invaded; the greater part of the ethmoid bone, and the os planum were also invaded. The tumour was ulcerated in two points in the front. These ulcers were due to external violence; they supported rudimentary teeth which had been driven forward by the tumour; this part had the appearance of the groin of a well-known animal. The veil of the palate was upraised and driven against the roof of the pharynx. The functions of swallowing and of sound were preserved, and respiration took place by the mouth. Hearing was difficult.

It is worthy of remark that the general state of the patient's health had not been influenced by this enormous tumour. It pro-

duced no suffering, but the weight was so great as to drag the head forward, and to the right. The mucous membranes which covered it had remained healthy, except those which covered the extra-buccal portion, and which were unprotected. There was a complete absence of swollen glands. Its development had been very slow, for it was six years since it first appeared under the form of a little motionless ball in the left canin-fossa. Its appearance was smooth, and its substance suggested that of india-rubber. The exterior part of the mouth somewhat resembled a thick leaf of cauliflower.

Clinically, I attributed it to cancer, for nothing justified the apparition of this tumour. I hoped, however, to obtain a good result from a radical operation, both because the development had been very slow, and also because there had been hardly any tendency to invasion; it had, if I may use the expression, preserved a life of its own, and appeared as though grafted upon the being it affected. A ligature or a cauterisation would have been quite insufficient; it was absolutely necessary that this dangerous parasite should be destroyed.

Everything having been prepared for the transfusion of blood, I laid the patient on his right side. I decided to follow Fergusson's method, and to proceed by the piecemeal process. The operation comprised four periods:—

1stly. The cutting and dissection of the flaps. I adopted Velpeau's incision, which starts from the opening of the lips and progressed towards the middle of the zygomatic arch, and I detached the cheek and the upper lip from its connections with the tumour.

2ndly. Seizing a gouge and mallet, I made a horizontal incision in the front face of the right superior maxillary, which separated the nasal process from the body of the maxillary, by which means the orbitary border was preserved, as well as the malar bone. Into the incision thus made I slipped a strong lever  $2\frac{1}{2}$  inches broad, and heated to white heat, under the floor of the orbit; here I was stopped by a bony resistance which was caused by the posterior nasal spine of the palate bone, strengthened by the pterygoid process on the same side.

3rdly. I detached the soft parts until I succeeded in slipping an elevator into the pterygoid maxillary opening; I then separated the tumour from the velum by a stroke of the knife, and I cut into

the mucous membrane of the palate, outside of the enormous protuberance the tumour made into the mouth.

4thly. Seizing Fergusson's cutting forceps, I attacked the tumour on the inside, and thus succeeded, by repeated strokes, in separating it from the parts that had remained healthy. I then seized the tumour with the lion-toothed forceps, surrounded it with a cloth, and succeeded by a twisting movement in detaching about two-thirds of it. I then employed the cauteries, in order to stop the haemorrhage of the larger vessels, and that being done, I cleared away from the cavity all the morbid tissue, and all that appeared to me suspicious.

By these means I was enabled to preserve the roof of the orbit, the orbital border, the nasal process of the right upper maxillary bone, and the largest part of the malar bone. But the right palate bone was lost; of the left maxillary there had only been carried away a part of the palate process, from the body of the bone as far as the second molar; the vomer and the ethmoid bone had disappeared, and the sphenoidal sinuses were exposed. After having well scraped the whole of the cavity, and assured myself of the absence of neo-plastic tissue on every side, I proceeded to the dressing of the wound, which mainly consisted of four wire sutures.

The patient had, in spite of every effort to avoid it, lost a great deal of blood, and some time elapsed before he returned to consciousness.

The cure was rapid; the operation had been radical. Three years have now passed, and the surgeon's aid has not been required.

#### 2ND CASE.

This was the case of a young woman, A. C., from Bleharies, Hainault, near St. Armand, who had been for some years isolated.

Her disease begun eleven years before, by the appearance of a hard and reddish lump in the canine fossa on the right side; this tumour which was then the size of a pea, and hard and motionless, was from its first appearance the seat of intolerable suffering, comparable to a violent attack of dental neuralgia; it was on this account that the first practitioners that she consulted began by extracting all the corresponding teeth; the result was a continuation of the pain, and beyond that, a more rapid development of the

tumour, which, of a very vascular nature, was attacked successively by several surgeons; the frightful haemorrhage which resulted from these efforts obliged them on each occasion to abandon their task. The caustics which were recommended had no better success. After ten years of suffering, the tumour had acquired a colossal development; altogether this tumour was larger than the head of an adult. It bled frequently, and each haemorrhage helped to extenuate the patient. Perchloride of iron alone was able to momentarily arrest the losses of blood.

It was under these conditions that I saw the patient for the first time, and that I resolved to undertake the operation. The antecedents of the family offered nothing noticeable; her parents were living, and enjoyed good health; her brothers and sisters were robust. Notwithstanding the loss of blood which the patient had undergone on so many occasions, her general state appeared good.

The effect produced by the appearance of this person was most painful, one would have said, a human form surmounted by the head of a hippopotamus. The right side of the upper maxillary region was considerably developed, and surpassed and masked the whole of the ear. The orbitary border had been upraised from beneath it until it had become horizontal; the nose was drawn outward and to the left; the left wing of this facial appendix corresponded with a line lowered perpendicularly from the middle of the lower left eyelid towards the opening of the mouth on that side; the bony apparatus of the face had altogether participated in the change of direction which this enormous development of the tumour impressed on it; the very bones of the nose had deviated, and the base of the nose thus spread out measured 7 inches. The left nostril preserved a small opening sufficient to admit a soft and very thin probe. The enlarged opening of the mouth measured 22 inches; from this opening proceeded an embossed tumour, which spread behind under the form of an oblique barrier, from left to right, and embraced all the solid parts of the palate. The part outside the mouth was bi-lobed; each lobe was of the size of the head of a full-grown foetus. A vertical groove 2 inches deep separated these two lobes at their extremities. This groove was due to the primary action of the inferior maxillary upon the tumour before it had grown out of the mouth cavity. This extra-buccal part was hard, embossed, smooth, bluish, like a cartilage, and exhibited on

its surface a network of blood-vessels. It was the seat of erosions, and of ulceration also, for it bled at the least touch. The intra-buccal part appeared to have developed particularly at the expense of the antrum ; it had taken, under these circumstances, the proportions of the head of a full-grown foetus ; its lower roof had descended ; the skin that covered its outer front was extremely extenuated ; that which corresponded to the lips was tumefied, and overrun by arterial vessels as strong as the radials of an adult ; thick tortuous vessels agreed with them.

The blood was very thin, so that a pin-prick in this region would have been sufficient to bring about death by haemorrhage. On the left side the tumour had invaded the nasal fossa, and had produced by condensation a compact bone, comprising the interior table of the superior maxillary corresponding to the wall of the other, the flat bone and the ethmoid ; the left nasal fossa was represented by a very minute canal.

The front wall of this tumour was formed by a thick bony slab of half a centimètre ; at its upper part, starting from the left orbitary border, it englobed the nasal processes of both the superior maxillary bones. All the front face of the right maxillary, and part of the front face of the left, spread out in the form of a fan, and became thinner in proportion to their distance from their point of origin, losing themselves at its extremity in a bony pellicule, which covered, or rather closed, the front wall of this solid tumour ; this pellicule became confounded on the hind side with a harder bone forming the zygomatic surface of the superior maxillary ; but that zygomatical process had descended still lower than the angle of the jaw, such as would exist in a healthy subject.

Above and outside the bony pellicule became mixed with the very-much-spread-out-and-enlarged malar bone ; below and behind it met a bony blade, which, being produced by the descent of the palate process, of the two superior maxillaries, and of the incisive bone, formed an enormous outburst into the cavity of the mouth ; in this manner it succeeded in furnishing a solid shield to this strange zoophyte. The palate bones had done their share in the formation of this shell, but the tumour was clearly separated from the soft palate.

The length of the tumour, measured from the middle of the orbitary border, was 15 inches. Its limits were distinct, there being no trace of ganglion, nor invasion of neighbouring tissues

The orbital cavity had remained unaffected by the development of the evil, if we judged of it by the position of the eye, and by the normal functions of that organ. It was not the seat of any pulsation or breathing. The function of smelling was destroyed, but hearing was preserved. Swallowing required in its first stage the employment of a narrow pipe, which only allowed of the use of liquid matter.

Here the question presented itself, What was the nature of this tumour? It was composed of a bony shell, and of a fibrous tissue, analogous to the construction of a wart; this fibrous tissue was overspread with knots of ossification. It had taken eleven years to develop itself, without ever stopping in its evolution, or melting away by passing into a state of suppuration. It had in no way infected the economy; there was nothing in it to justify its appearance; it was not a periostite, nor a carie, nor a hypertrophy; neither was it an odontocele, nor a dropsy of the antrum. It was not an accumulation of plastic lymph, and it was not an abscess.

We had therefore before us one of these forms of cancer whose appearance, in the present state of our knowledge, is a mystery. From the histological point of view it was an osteofibromana. Its complete ablation alone could enable its proprietor to escape from the destruction with which she was threatened by her dangerous guest. Others before us had tried to master it; it was for us to profit by their experiments, and to try to avoid the stumbling-block against which they had struck. The constant cause of failure had been the loss of blood, threatening the life which it was our business to save. Bryant, under these conditions, is a partisan of the tying of the carotid artery as the first step to the principal operation.

I would have willingly spared the patient the danger of tying so important a blood-vessel, and I hoped, by following Fergusson's indications, to be able to reach the end of my task without making use of this preparatory operation.

I decided to proceed by the piecemeal process. As to the vessels of the face, which under these circumstances always bleed the most freely, I counted on ligaturing them successively, and I resolved to be ready at all hazards to ligate the carotid, should I find myself obliged. I adopted Fergusson's incision to cut open the face, and so place the tumour at my disposition.

Before beginning, I placed temporary ligatures upon the enor-

mously developed labial arteries. The incision of the face caused so considerable haemorrhage, the blood inundating the mouth and threatening to suffocate the patient, that I was obliged to have immediate recourse to the ligaturing of the carotid, which was promptly executed; and I saw that I could then continue my operation without being too much disquieted by the loss of blood. I followed thus the line traced in 1858 by Field of Brighton; in 1866 by Holmes of London; by Pemberton of the same city, and finally by W. H. Pancoast, of Philadelphia in 1868.

Under these conditions I pierced the tumour by its centre, and removed it by pieces and morsels, preceding each ablation by a cauterization of about half a centimetre in depth. This latter operation was free from pain to the patient, and by it considerably spared the blood. I then succeeded in slipping the very thick perioste upon the solid shell, from the inside to the outside, by placing in the groove of separation strips of lint steeped in perchloride of iron.

In this way the emptied and exposed shell was attacked by means of Fergusson's cutting-forceps, and disposed of in the same manner by the piecemeal process. Every time that I noticed a loss of blood at all considerable, I stopped it by means of the perchloride of iron; for it is worthy of remark that the blood here is not arrested by the actual cautery when the haemorrhage proceeds from a bony part.

The entire operation took about five hours. All the bones of the face took part in this species of combat, and there remained little more than a limited portion of the right superior maxillary, and the palate bone on the same side.

As for the bones of the nose, everything had of necessity been sacrificed.

The patient having escaped the dangers of the operation, its consequences were remarkably mild. At present she enjoys perfect health, and the cure has remained good for about two years and a half. There is every indication of a complete success. There remains an ulcer of the size of a silver dollar in the middle of the cheek; this ulcer has been caused by the extreme tension, and consequent thinning of the skin.

I had taken care not to sacrifice any of it intentionally. I had before me the example of Liston.

Every function is restored to the patient; thus has been verified

what Fergusson wrote in 1867: "If a case such as those which illustrate our works were to present itself, I have no doubt the modern surgery would triumph over it."

In closing this essay, I cannot omit to express my admiration of the Medical Society of England, beyond doubt the oldest and best in the world. It can be safely said that England is the classic land of surgery. The publications which appear under the authority of your powerful Society are lighthouses which every surgeon must consider as guides which cannot lead him astray. I would also express my admiration of the illustrious Fergusson, the father of that conservative surgery which now happily governs the world. It is he who has encouraged us, and he who has furnished us the means of attacking and destroying those enemies of the human constitution, which were formerly able to undermine and destroy it without interference.

I have come to render to "Cæsar what is Cæsar's," and to present the slight homage of a victory gained under your banners.

Mr. MORGAN was sorry that there were not more Fellows present to hear M. Servais' paper. He had received letters from several eminent surgeons regretting their inability to be present. It could not but be a compliment to the Society that M. Servais had brought his work to them, and on behalf of the Society he desired to convey his thanks to him for doing so. He thought the plan of removing as little bone as possible was one which most English surgeons adopted. He had seen Fergusson do this operation, he had seen many others do it, and he had done it himself; and he thought all would agree that to grasp and tackle either of M. Servais' cases was a task of great pluck and vigour, requiring more than ordinary determination. He was interested to find that in one of his cases, M. Servais did not adopt our usual incision, but he thought that the one employed in its place did not give so wide a scope. As to the nature of these tumours, he thought the majority of them were heterologous, increasing rapidly and invading other parts. These two tumours were therefore exceptionally favourable, though even if one knew their benign nature, after seeing their photographs, one would hesitate to operate. A boy who came under his care at Great Ormond Street, had a large tumour which sprouted as a fungous mass from the upper jaw into the buccal cavity, causing the cheek to become much swollen. He himself thought, and his colleagues agreed, that it was of a malignant nature. But there was a smaller but almost similar growth from the lower jaw, which made them hesitate a little. He was taken into the Children's Hospital, but, developing measles, was sent to the London Fever Hospital. When he came back the swelling of the cheek had almost completely subsided, and the fungating mass had almost entirely disappeared. The child was made an out-patient, and returned ten days afterwards with the mass in the upper jaw as big as ever. The swelling of the lower jaw had remained about the same size for the whole time. The glands in the neck had become infiltrated, and there were secondary growths elsewhere.

The appearance presented was much like one of the photographs that had been sent round. Had he operated in that case he would have adopted Fergusson's median incision, as it gives so much wider a gap. These wounds usually healed with remarkable rapidity and very little scarring. In one of his own cases of ablation of the upper jaw, the stitches were removed in three days and there was no scar.

Mr. ALLINGHAM, junr., saw a case under Mr. Pick when he was house-surgeon at St. George's. An incision was made at the root of the nose, down its middle, and through the lip ; a keyhole-saw divided the intermaxillary suture, and the tumour was removed. The woman recovered, and is now in perfect health. It was a myeloid sarcoma, and was circumscribed. If it had been round or spindle-celled, he would have expected more involvement of the soft parts.

Dr. SERVAIS, in reply, thanked the Fellows for their kind attention to his paper. As England had done so much for special surgery, he thought it only right to offer his first-fruits in that direction to an English audience.

## CASE OF SARCOMA INVOLVING BOTH SUPERIOR MAXILLARY BONES AND HARD PALATE. REMOVAL OF THE TUMOUR, TOGETHER WITH THE GREATER PART OF BOTH BONES. RECOVERY.

By F. BOWREMAN JESSETT, F.R.C.S.

S. G. B., a married woman, aged 35 years, was admitted into the Brompton Cancer Hospital, on October 31st, 1886, with a large growth, involving the whole of the hard palate, and projecting into the mouth to the line of the teeth on both sides.

*Family History.*—Her grandfather died of epithelioma of the lip, no further history of cancer in the family. Father and mother both living and healthy ; no history of syphilis.

*Previous History.*—She first noticed a lump in the hard palate twenty-one months ago ; it grew rapidly until it attained the size of a bantam's egg, and projected considerably into the mouth, interfering with mastication and speech. She, six months after first noticing the growth, went to Guy's Hospital, where she was operated upon by Mr. Clement Lucas, by the courtesy of whom I obtained from Mr. Targett, the Surgical Registrar of Guy's Hospital, the following particulars : " She was admitted into the hospital on June 11th, 1885, under the care of Mr. Clement Lucas, for a myeloid sarcoma of the hard palate, which had existed about six months. On June 16, 1885, Mr. Lucas excised the tumour with scissors, and then scraped the base, applying tannic acid

to stop hæmorrhage. No portion of the hard palate was removed, and on June 28th, she was discharged, the wound having granulated nicely." In June, 1886, she was admitted into St. Thomas's, under Sir W. MacCormac, with extensive cancer, the growth on examination proved to be a very vascular sarcoma, with definite myeloid cells and spiculæ of bone.

It was about three months after the operation at Guy's, that she noticed the edges of the opening were swollen and tender, and since then the growth has extended rapidly.

*Present state, October, 1886.*—There is an irregular mass implicating the whole of the hard palate, and the inner aspect of the gums on both sides, as far forward as the first molar tooth. The soft palate is also infiltrated with the disease to within a quarter of an inch of its posterior edge; the growth extends upwards into both nostrils, but more so in the left, where it is seen protruding for some considerable distance, presenting somewhat the appearance of a large polypoid growth. The patient cannot breathe through either nostril. By digital examination of the pharynx, the tumour is felt pressing back upon its posterior wall, and it is impossible to ascertain how high it extends posteriorly. The patient suffered comparatively little pain from the growth, but complained chiefly of the difficulty in eating, the movements of the tongue and capacity of the mouth being limited by the growth, which is the size of a large lemon projecting into it. There had never been any bleeding. The tumour feels hard, but elastic to the touch, is firmly fixed, and appears to extend deeply into both antra. There is a slight fulness over the left antrum, but the teeth on both sides are very good, and in no degree loosened.

At the urgent request of the patient, I consented to endeavour to remove the growth, although at the time I feared I should not be able to do so without removing the whole of both the superior maxillæ, but I determined in the first place to endeavour, at any rate, to leave the infra-orbital plates intact if possible, and I hoped to be able to accomplish this, as, from the history of the case, it appeared clear that the growth commenced solely from the hard palate, or from the alveolar process.

On November the 9th, the patient being placed fully under the influence of an anæsthetic, I made a most careful examination of the tumour, but could find little more than I had done previously; the growth, however, extended so far back, and appeared so

firmly fixed, that I had some misgivings as to the result of the operation.

*Operation.*—I made two incisions, extending from either angle of the mouth, upwards and outwards towards the outer angle of the orbits. I then reflected the flap thus formed which included the nose, upward over the forehead, and in this manner thoroughly exposed the whole of the front of the growth and superior maxillary bones. I next, with a fine-grained saw, divided both bones about half an inch above, and parallel to, the alveolar processes through their whole extent, and with a raspatory used as a lever, separated this portion of the bones from the upper and remaining halves. Having thus loosened this portion with the tumour attached, I seized it with the lion-forceps, and at the same time introduced the index finger of my left hand into the pharynx behind the growth, and in this manner was enabled gradually to remove the whole of the disease, with the exception of that portion which had grown into the antrum on the left side. This, however, was quite detached, and was subsequently easily removed by means of a Volkmann's spoon.

There was scarcely any haemorrhage, and the disease appeared to have been entirely limited to the portion of bone removed, having grown from thence, and insinuating itself into the antrum, and upwards between the ethmoidal spongy bones.

The skin flaps were next brought together with hare-lip pins, and one or two horse-hair interrupted sutures, and the whole surface dusted over with iodoform, and the patient, who stood the operation remarkably well, was returned to bed.

She was fed for the first twenty-four hours with nutrient enemata, after which time she took food by the mouth from a feeding-cup, with a piece of india-rubber tubing attached, sufficiently long to pass over the root of the tongue.

November 10th. Patient has passed a good night ; temperature normal.

November 12th. Patient still doing well. The mouth is kept washed out with a solution of boroglyceride there is very little discharge ; takes nourishment well.

November 15th. Two of the hare-lip pins removed ; no sign of pus on them.

November 16th. Remaining pus removed ; wound perfectly healed.

The patient, from this point, made an uninterrupted recovery, and is now as you see, February 14th, more than three months after the operation, quite well. Her speech is peculiarly good, in fact, with the exception of a few letters, she speaks well. There is little or no deformity. She is now being fitted with a plate by Mr. Glassington, who hopes to be able to fit her so that she will be able to masticate her food.

*Remarks.*—This case represents one of those rare cases in which the practice of removal of the greater part of both the superior maxillary bones may be practised with advantage.

In performing the operation, I preferred adopting the primary incisions as suggested by Heyfelder, as from the size of the growth and the uncertainty of its deep attachment, I thought these incisions would afford the greatest possible amount of room for the removal of the tumour, and also in case of deeply seated haemorrhage occurring during or after its removal. This incision would enable me to obtain the best view of the deep parts, after having fully exposed the tumour by reflecting the flap upwards. Instead of attempting to pass a chain-saw through the sphenomaxillary fissure which in this case would have been, I think, impossible to accomplish, I preferred to saw through the maxillary bones from the front, and then by inserting a chisel into the divided bone separate the alveolar processes and lower part of the bones from the upper. By this means I avoided wounding the growth which was very vascular, and I was enabled to remove it with its attachments, as you see, entire.

Had I persevered and thrust a chain-saw through the sphenomaxillary fissure and sawn through the bones from behind, it is evident that I must have divided the growth as well, and in all probability met with very considerable haemorrhage. By this method of dividing the bones, I was enabled to save intact the pterygoid process of the sphenoid bone, which is a very important matter.

Had the disease extended deeper than it did, by removing the lower portion of the bone by this method, it would be easy by means of a gouge or gouge-bone forceps to remove as much more as was necessary.

Doubtless this method of proceeding has been adopted by other surgeons, but I have been unable to find any case so operated on recorded.

A point of interest about its growth is its character; and here I

should have been glad if I had had a little longer time for the microscopical characters to be thoroughly examined, as the original growth is reported to be a myeloid sarcoma, and again at St. Thomas's Hospital the growth is described as a myeloid sarcoma. The growth, however, appears to have undergone some change, as Mr. Stonham, the pathologist at the hospital, and Mr. Dove, have had sections made from different parts of the tumour, and can find no myeloid cells whatever. And although they consider it undoubtedly to be a sarcomatous growth, yet they are undecided as to its true nature.

I have put some slides under the microscope on the table, and shall be very thankful if the pathologists in the room will give me their views as to the true character of the growth. Another interesting point is, that when Mr. Lucas removed the growth in June, 1885, he did not remove any of the hard palate. Now, however, as you will see if you examine the specimen, the whole of the hard palate is gone, having been destroyed by the tumour. There is no doubt the growth commenced in the periosteum of the hard palate, for Mr. Lucas is reported to have scraped the base after removal with scissors, and then extended right and left absorbing the bony structure as it extended, at the same time extending upwards and insinuating itself into the antrum on either side, and backwards between the ethmoidal spongy bones.

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February 21st, 1887.

## ON THE DIFFERENT MODES OF ADMINISTERING MERCURY IN SYPHILIS, AND THE INDICATIONS FOR THEIR APPLICATION.

By E. MILNER, M.R.C.S.

I THINK every one here to-night will admit that the treatment of syphilis is comprised pretty well in the word *mercury*; but the manifestations and evidences of syphilis are of so varied a character, and above all, are in many of its forms the source of such terrible anxiety to the patient suffering from them, that the few observations I have to make, founded upon the experience of twelve years' out-patient practice at the Lock Hospital, may, I

hope, be of some service to the members of this Society, in helping them to arrive at some definite conclusion in some instances, as to which preparation of mercury they should adopt, in order as rapidly as possible to get rid of those visible signs of syphilis, which to many of their patients seem almost as formidable, as must have been the curse of leprosy in the days of the laws of Moses.

I will at once admit that, apparently in many cases, and perhaps in the majority, blue pill is as good as blue ointment, and green iodide of mercury, as Donovan's solution; but even in these cases, I believe, that more accurate and more careful observation in practice will teach us, that such an admission is unjustifiable.

To-night I shall only venture to bring before the Society the consideration of *three* of the most common methods of administering mercury, and these are:—

1. Some of the cases in which green iodide of mercury should be used.
2. Some of the cases in which inunction should be practised.
3. Some of the cases in which the vapour of calomel should be applied.

And I shall endeavour to point out the peculiarities of the syphilitic manifestations, which in my experience would indicate to me, which of these three preparations I should use in a particular case.

Of all the syphilitic rashes the most evident, the most persistent, and perhaps the most difficult to combat, is probably the vesicular syphilide, and it is upon this peculiar form of syphilide I would venture to make my first notes in reference to the use of green iodide of mercury. This form of rash most frequently occurs in light-haired people, it occurs more frequently in women than men, and is nearly always associated with the drinking of large quantities of wine, as distinguished from spirits.

There is another class of patients in which the vesicular is associated with the early tubular syphilide, and this usually occurs in the dark-haired patients during cold weather; in the underfed and underclothed patients of anxious temperament, who have faith that two glasses of stout a-day are necessary for the cure and treatment of their disease, and take them in preference to food. In the first of these two classes, I have found that green iodide of mercury with Donovan's solution in large doses has proved most

advantageous, while in the second class the inunction of the German preparation of blue ointment has excelled all other methods of treatment.

In billiard-markers and actors of a certain class, in barmaids and actresses of a certain class, and in commercial travellers, who consider it necessary to have a glass with every customer to conclude a bargain, and in so many others who sit up late and follow very much the practices of these typical classes, or remain long and late at the card table, the syphilitic rash, of whatever character, is apt to become angry, excessively red, and very evident. To all these, whose living may to an extent depend on their personal appearance, I say emphatically, in spite of the diarrhoea which is so constantly present in such cases, give green iodide of mercury, and give it in large doses, stop their spirits if you can (especially brandy), but give them green iodide of mercury; Donovan's solution with soda and iodide of sodium will assist, for iodide of sodium is much better borne by these patients than the corresponding salt of potassium.

I feel no doubt that the keeping of late hours very materially alters the character of the syphilide, and therefore such a history should influence the selection of the preparation of mercury. People who sit up very late have their skins thick, and very frequently covered with an oily perspiration; and it may be this, while impeding the nutrition of their skins, irritates the manifestations of syphilis upon their persons, and is one of the causes of the angry—or so-called gouty—character of the syphilide, of those whom inclination or necessity keep out of their beds.

Barmaids, as distinguished even from barmen, and the whole of the rest of the syphilitic world present the reddest, the most angry syphilitic rashes, and are the most difficult to cure, and indeed sometimes present a rash, which is never found, as far as my experience goes, on anybody else; a rash which is excellently illustrated by the specimen which, by the courtesy of the authorities of the museum of St Bartholomew's Hospital, lies on the table, and which might, I think, be fairly denominated, "Barmaids' Syphilis." For all these cases I select green iodide of mercury.

Patients who drink constantly, however much you may frighten them, will never take care of themselves, though in a maudlin state of penitence, they will promise anything; I need hardly say

they can never be depended upon, and I have found, that though in some of their cases, inunction would probably be the best method of treatment, still green iodide is the next best, and will probably, under all the circumstances of the case, prove most efficacious. It is also the most available remedy with patients who sit up late, who have light hair, and above all drink frequently, though perhaps stopping short of actual intoxication; and the typical case for the use of green iodide of mercury, would probably be the light-haired, degenerated lady, who sits up all night playing the piano at suburban parties, who does not eat much, but refreshes herself frequently, and takes a little brandy before she goes to bed in the early morning.

I next pass to a few points which guide me in ordering the exhibition of mercury by inunction, and would remark that the German ointment, less strong, and containing more suet, and therefore harder than our own, is preferable to the strong ointment of the British Pharmacopoeia for this purpose. It salivates severely less frequently and produces more permanent effect. The cases in which, in my experience, the ointment is the best preparation of mercury to use, must be divided into early and later stages of the disease.

Many cases of primary syphilis in healthy abstemious light-haired men do exceedingly well under the administration of mercury by inunction, and they may even sometimes be so fortunate as to escape any further manifestations of the disease; but I find as a rule, that patients, especially with dark hair, treated in this country, at any rate with inunction, though they might almost avoid syphilides, and distressing external manifestations of the disease upon the surface of their bodies, suffer so severely from a form of sloughing sore throat, as to do away, in a great many cases, with the advantages which this method of treating primary syphilis undoubtedly possesses; for I think that inunction, even in the early stages of syphilis, gives the best prospect of a subsequent complete cure. Inunction, in the more advanced stages of syphilis, is a refuge for the destitute, and rarely have I found it give other than gratifying results in older cases which have defied most other methods of treatment, save where the patient is careless, drunken, and inattentive to the directions of his medical adviser. Large syphilitic testicles, secondary gummata in patients (who from the duration of their disease ought to be in the tertiary

stage one would think), and syphilitic interference with nerve-supply yielded alike like magic to the treatment of inunction, when the surgeon is at his wit's end, and the patient from anxiety has almost lost his reason. In fact, I believe it is not too much to say that the treatment by inunction in the advanced stages of syphilitic evidences, is by far the best remedy we possess, and most rapidly produces a disappearance of chronic syphilitic symptoms, especially in the man who has implicitly followed the directions of his surgeon, and has eaten and drunken moderately as he was bid.

To sum up, use inunction in the early stages, when you have a healthy, light-haired, abstemious patient with a primary sore, but above all, congratulate yourself that with the German blue ointment you can almost certainly cure the distracted married man, whose ambition for the last five or perhaps ten years has been to get rid of a swollen testicle or some other syphilitic lump.

In conclusion, I would draw attention to the advantage of mercury administered locally in the form of fumigation, leaving entirely the question of its administration generally for the cure of constitutional syphilis, and I fear my remarks on this point to be of value to this learned Society must be confined to two notes only. We are told that the hard local sore should usually disappear under treatment in about six weeks. In very many cases the Hunterian chancre remains much longer, and I have seen distinct hardness remaining at the end of a very, very much longer period. How to get rid of this induration rapidly is, I am sure, a most material point in the treatment of syphilis, because I believe that the duration of the primary lesion affects the constitutional severity of the case; though I would say in passing that I believe in my own mind that the quickly disappearing parchment French sore is most apt to be followed in the early stages of syphilis by serious nervous lesions, and because frequently the hardness of an imperfectly absorbed primary sore is the point at which, in after life, destructive ulceration of the penis not unfrequently begins.

To rapidly get rid of a local sore, the local administration of mercury in the form of the vapour of calomel is of material assistance, whether the sore be the smooth flat-headed indolent button or accompanied by destructive ulceration of the glans penis.

For in ulceration of the extremities, especially the legs, syphilitic

in their origin, but frequently associated with a weak state of constitution, or more frequently still, associated with a too rapid or indiscriminate administration of mercury, you have cases that require mercury and in which it is almost impossible for a time to continue the administration of that drug. In these cases the vapour of calomel locally applied is of material assistance, and it is also in the red, angry, prominent eruption on the forehead along the line of the hat leather, and in the destructive ulceration of the fauces in late secondary syphilis.

Mr. CARTER said the thanks of the Society were due to Mr. Milner for bringing forward in so able a manner a question of the highest practical importance. He trusted that in his reply Mr. Milner would mention the proper duration of the mercurial course. It had constantly occurred to him in ophthalmic practice to meet with cases of late syphilis, which had written its mark on the retina, or had produced cerebral lesion in the course of the optic tract. The common history was that early in the attack the patient had been treated with mercury, that discrimination had been used in its method of administration, but that it had been left off too early. Ricord, whose immense and long experience and enormous practice in this department was unrivalled, considered twelve months' mercurial administration necessary as a rule; and he himself had often felt sure that medical men, especially family practitioners, have been afraid to impress the necessity of the long duration of treatment on their patients, lest they should acquire the reputation of "making cases." In his own practice, he pinned his faith chiefly to corrosive sublimate in late syphilis, given internally in small doses over long periods; if it cause indigestion, let it be separated by appreciable periods, frequently three hours, from the meals.

Mr. DRYSDALE referred to the absence for a long time of a discussion on this important subject. There was even at the present time the widest divergence of opinion as to the proper treatment of syphilis. In Edinburgh, Heron Watson was treating it without mercury, whereas Taylor, in New York, gave mercury for three years. Were he asked, he could not say what was now the method of treatment in London. Fournet, in Paris, was giving an interrupted mercurial course of eighteen months' duration. These opposite opinions were puzzling, and would make therapeutists hesitate. He had tried injection of mercury; it was the worst plan, and might cause abscesses. Iodide of mercury, corrosive sublimate, and mercury with chalk, were, in his opinion, equally valuable, though he could not profess to discriminate in which particular class of cases any particular one was indicated. Didier, of Lyons, was experimenting still with and without mercury, reserving the mercury for the worst cases. It must be remembered that syphilis was a different disease in different people, as with scarlatina. In some people thirty years after there would no sign of it, and there might be a family of healthy children; others, again, would never have good health after the first appearance of the chancre. He thought the use of mercury and of iodine were justified theoretically, for they were both excellent germicides, and recent researches seemed to show that there was a germ for syphilis. Mr. Milner had said that there was only one substance useful in syphilis, but he held

that it was dangerous to treat tertiary syphilis as a rule with mercury. Take, for instance, sloughing sore throat ; iodide of potassium would cure it readily, whereas if mercury were given the throat would continue to slough, and patient would lose his voice. He, himself, treated syphilis without mercury for many years, so did Mr. Hutchinson. The latter had stated that he had cut short the attack after the hard sore altogether with mercury, but he himself had never seen that happen, and the evidence of Didier and of Bœck confirmed this. Fournier says that, if mercury be given for two years, an attack of tertiary syphilis will be altogether prevented. In young people, primary and secondary symptoms were almost always slight. Tertiary syphilis did not come on till three years as a rule. Taylor, of New York, gave one-sixth grain of iodide of mercury twice a-day for two or three years ; he says it is a tonic. He, himself, had taken it for two years, and had found it quite innocuous. One must avoid, however, pushing mercury to excess ; for in old days at the hospital to which Mr. Milner is attached, two or three deaths per annum took place. We were indebted to Wallace, of Dublin, in 1832, for the introduction of iodide of potassium, and all now recognised its value.

Mr. CARTER said that at the National Hospital, in Queen's Square, many cases of late syphilitic lesions of the nerve-centres were met with, and experience there had shown that although iodide of potassium was most valuable as a remedy for the symptoms, yet it was absolutely useless against the constitutional taint. For instance, in syphilitic aphasia the patient rapidly improved under 10, 15, 20, or 25 grains of iodide of potassium three times daily ; the iodide should be continued as long as the improvement continued, then if it were stopped the patient would come back in three, six, or nine months, with other active syphilitic manifestations. To effect a cure, iodide should be pushed as long as improvement continued, and then it should be followed by a prolonged course of mercury in small doses.

Mr. DRYSDALE agreed that in such cases mercury should be tried in the later stage.

Dr. LAUDER BRUNTON said it was difficult to form an idea of the mode of action of mercury, the syphilitic poison was probably a living organism, and mercury might act as a germicide, but it must be remembered that though iodine was a powerful germicide, iodide of potassium was not, nor were the other iodides. Iodides as such were present in the tissues, there was no free iodine, and we could not imagine that free iodine was liberated to any great extent, at least not sufficient to destroy any organism that might be present. The iodides probably acted on the tissues themselves and not on the poison. As an analogy take the egg or caterpillar in the oak-gall, which were analogous to the organisms in syphilis. They gave rise to irritation and made the gall grow. We could either kill the organism and thus stop the growth of the gall, or after the gall was produced we could use a drug, which acting on the gall and causing it to wither would leave the organisms present ; galls would then probably form in another part of the tree. Similarly, iodide of potassium in large doses would remove gummatous deposits, but it might still leave some of the poison untouched, which would give rise to new gummata. Iodide of potassium given with mercury might both kill the germ and remove the deposit. But mercury might be injurious both to the disease and the organism. He had recently seen some cases of intermittent albumenurea in children and in adults, some were non-specific, but in two men it followed a prolonged mercurial course. Albumen appeared in the urine

in varying quantity, and would then for a time entirely disappear. Mercury in this respect resembled lead, and both could be removed by iodide of potassium. In lead poisoning, the renal tubules are found plugged with carbonate of lead, the kidney substance becomes secondarily diseased, and albumen appears in the urine. In mercurial poisoning, the mercury appeared in the urine, but it had also the peculiar effect of causing lime to appear in the urine, and the lime formed little plugs in the tubes in the same way that carbonate of lead did ; the lime was derived either from the bones or the soft tissues. He would refer to some cases of recurrent syphilis. When the Western Bank in Glasgow failed, men who had their property swept away, and became suddenly poor, developed syphilis. A case came under his care of a naval officer, aged 50, who contracted syphilis at Lisbon when a middy, had a mild attack, was treated and remained well till six months before he saw him. He had been much worried and worked, and he had a syphilitic sore throat. He was treated with mercury and iodide of potassium, and iodoform was applied to the throat ; the latter healed well. Would Mr. Milner use mercury in these cases ; in what form would he give it, and for how long ?

M. VICTOR DE MÉRIC agreed with Mr. Milner that iodide of potassium could not rank as a cure. Why did he also give iodide of sodium ? He believed in giving mercury itself without sodium or potassium. He thought inunction rather a dirty method of administration. He did not think it mattered in what form mercury were given, provided it were kept up for 1,  $1\frac{1}{2}$ , or 2 years at least. Phagedænic hard sores were very rare, he thought they were usually not specific, but were irritated soft sores. He did not believe that any treatment would prevent the appearance of secondary symptoms. Tertiary syphilitic disease of the testicle was rare. He had treated cases of tertiary phagedænic sore throat with iodide of potassium without benefit, but with pills of iodide of mercury it got well in fourteen days. Mercury in small doses was undoubtedly a tonic ; small children fattened and looked well on it. With reference to the French statement that two or three years' treatment would prevent the development of tertiary symptoms, it must be remembered that these latter often developed before the shortest of the two periods mentioned. It was excessively difficult to persuade patients to continue the treatment sufficiently long.

Dr. JULIUS ALTHAUS regretted that he had only heard the conclusion of Mr. Milner's paper. He hoped the Fellows would tell him which form of mercury was the best for inunction. (Mr. Carter said that Mr. Milner had specially recommended the German blue ointment.) He considered that oleate of mercury was not so dirty as the others, and seemed to be more readily absorbed. More recently he had used lanoline as recommended by Liebreich, and was pleased with it ; he used equal parts of blue ointment and of lanoline with marked effect. Hypodermic injections of corrosive sublimate acted with more vigour than either blue ointment externally, or other mercurial preparations internally. In the selection of a drug so much depended upon the intensity of the symptoms. If the symptoms were severe, he would either use the hypodermic injections or blue ointment with lanoline. In milder and less virulent cases, blue ointment and oleate of mercury found their appropriate spheres of action. He administered mercury internally, where there were no particular symptoms, *e.g.* in early cases. He told his patients they must take it for twelve months or two years, after this secondary and tertiary symptoms were rare. Tannate of mercury and blue pill in small doses

suited syphilitic throats. Tannate of mercury in some cases acted slowly but well, in others in twenty-one days it produced salivation. He did not know whether this was due to some difference in the preparation, or to substitution by the chemist of some other drug. With reference to the treatment of late syphilis of the nerve-centres, he had seen cases of tertiary nervous disease eight months, twelve months, and two years after the primary chancre ; so, therefore, the text-book statement that tertiary syphilis in the nerve-centres usually appeared in from five to seven years after the primary sore required modification. He had seen severe cerebral and spinal lesion in from eight to twelve months after the primary sore. With regard to treatment he agreed with Mr. Carter that iodide of potassium in 10, 20, or 120 grain doses, was an admirable remedy for combatting symptoms, but was very deceiving if relied upon entirely. Relapses was frequent, he had seen them in his own patients and in those of others. He believed iodide now did cure the specific taint ; unless we gave mercury we could not hope to cure. The specificity of mercury become more and more apparent ; he regarded it as his sheet-anchor, and without it he would not be a physician.

Mr. T. K. SALTER said that four years ago he became inoculated on his finger. Mr. Henry Lee gave him baths, and mercury with iodide of potassium and sarsaparilla for nine months. He had had no secondary or tertiary symptoms.

Mr. MILNER, in reply, insisted on the importance of telling patients at the beginning of treatment that it was a twelvemonth's job at least, and with reference to marriage four years at least. He thanked Dr. Brunton for his striking botanical analogy. Though iodide of potassium was useful in syphilis, mercury was the cure. Iodide of potassium never had been a cure and never would be. In overdoses it was almost as detrimental as mercury, patients had their brains and every special sense destroyed, their legs and bellies got fat, and they looked and acted like eunuchs, having no more powers than them. Syphilis required to be cured, not played with. The advantage of treatment at a place like Aix was that patients went there to be rubbed, and they got rubbed at regular times, but no one could tell whether patients took their pills or iodide. He had seen cases of recurrent albuminuria, his own impression was that it disappeared with mercury and iodide of potassium. With mercury and iodide of sodium the albumen diminished, and in one case it disappeared. It was not necessary to go so far as the Glasgow Bank to witness the effect of anxiety in causing a recurrence of syphilis ; they were very frequently seen in private practice. Tannate of mercury was of such recent introduction that he could draw at present no conclusions concerning it.

*February 28th, 1887.*

A SUCCESSFUL CASE OF PARTIAL EXCISION OF THE LARYNX ON ACCOUNT OF INTRA-LARYNGEAL EPITHELIOMA.

By LENNOX BROWNE, F.R.C.S. Ed.

THIS patient was G. W., aged 61, occupied in a timber yard; applied at the hospital as an out-patient on November 1st, 1886. The case had been fully reported in the 'British Medical Journal' of February 5th, 1887, and was now exhibited ten and a half weeks after the operation. The disease, which was epithelioma of the left half of the larynx, had existed over twelve months. No microscopical examination was possible, because there did not appear any out-growth projecting sufficiently to justify attempts at removal of a portion for the purpose; the diagnosis had therefore been made on clinical grounds alone. The left half of the larynx had been excised on December 15th, 1886. The points of interest in the operation were that the Hahn's tampon-canula, consisting of a tube surrounded by compressed sponge, had been employed, it having been first rendered antiseptic by being dipped in a solution of corrosive sublimate, 1 in 5,000. Another point was the free use of the raspatory, by which means haemorrhage, so much dreaded in these operations, had been entirely averted, and only two small vessels required torsion. The man was speaking with a good though gruff voice, and was generally greatly improved in health.

P.S. July 15th, 1887.—Up to this date there has been no recurrence, and the patient has continued to gain in weight.

CASE OF FAUCIAL AND PHARYNGEAL TUBERCULOSIS, TREATED BY LACTIC ACID.

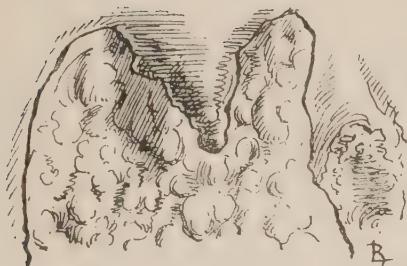
By LENNOX BROWNE, F.R.C.S. Ed.

MATILDA H., aged 20, married at 16, is the mother of three children, of whom the youngest is fourteen months old, and is "just being weaned." She herself was an only child, and was born when her father, who is still living, was only 19. Her mother

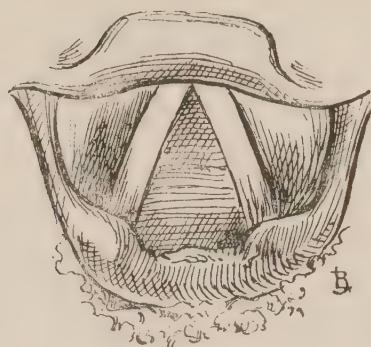
died before she could remember. The patient applied at the Central London Throat and Ear Hospital on November 15th, 1886, on account of pain just at the entrance to the gullet. No pain was experienced in the fauces, but the distress was so extreme lower down that she said she "would rather not swallow, so as not to have the pain." There was slight hacking cough, worse at night; and but little alteration of voice. The fauces were seen to be of characteristic paleness, and on the left tonsil, on careful inspection and with bright light, there was discovered slight creeping ulceration of a very superficial character, and with but scanty secretion. The tonsils were not in the least enlarged, nor were the anterior pillars of the fauces attacked by the ulceration. The back of the mouth was full of frothy saliva, which was in itself a source of distress, as the clearing of it was almost as painful as its removal by swallowing. The larynx was healthy as to epiglottis and vocal cords, but the coverings of the arytenoids were very congested, and there was slight thickening of the inter-arytenoid fold. The posterior wall of the pharynx was seen, both by oral and laryngeal examination, to be ulcerated. The appearance of the ulceration was quite distinctive from that of either syphilis or cancer, and was characterised by the presence of large masses of weak pale granulations. There was no enlargement of cervical glands in any direction, and no fact pointing to any other than that the case was one of tuberculosis. The stethoscope revealed nothing more than slight harshness of respiration, and somewhat impaired resonance at the right apex. There had been no distress of breathing, and neither night sweats nor diarrhoea. She had never had any illness affecting her chest or lungs. Some of the granulations were scraped away and submitted to microscopic examination, with the result of showing numerous bacilli of tuberculosis.

It will be observed from the illustrations, that the manifestations were in this case in the very situation remarked by Krause as favourable to treatment.

Having applied cocaine, I first scraped the parts with a circular curette—in fact, the instrument of Löwenberg for removal of post-pharyngeal adenomata. I then applied, on a cotton-wool brush and with considerable firmness, a 20 per cent. solution of lactic acid. This was repeated daily, the strength being increased to 40 per cent. and 60 per cent. At the end of three weeks acute



Pharyngeal appearance.



Laryngoscopic image.

inflammation of the pharynx and larynx took place; but, as asserted by Krause, the pain was no contra-indication to success; for on recovery the parts cicatrised healthily, and not only was the extreme odynphagia which had been experienced on admission completely relieved, but weight was regained, and the pulmonary condition improved. It only remains to add, regarding the case, that after a period of three months the improvement reported has continued. The patient eats all kinds of food without pain. Her weight has increased, and the pulmonary disease is quiescent.

#### CASE OF DISPLACEMENT OF THE HEADS OF BOTH THIGH-BONES, THE RESULT OF SOFTENING AND YIELDING OF THE CAPSULAR LIGAMENT.

By T. PICKERING PICK, F.R.C.S.

THE case which I show this evening is that of a boy, aged 11, who was admitted under my care into the Victoria Hospital for Children on February 1st, 1886.

Upon examination, his lower extremities were seen to be in a most abnormal and distorted position. He was unable to stand, unless he could support the weight of his trunk by grasping some solid object on either side, and then only in an extremely distorted position.

When laid on his back in bed with the pelvis straight, the right thigh was seen to be apparently much lengthened. It was rotated outwards, flexed and abducted, so that the outer surface of the thigh and leg rested on the bed considerably outside the line of the

side of the body. The left thigh, on the other hand, appeared to be shortened. It was rotated inwards, adducted, and somewhat flexed on the pelvis.

Upon examination it was found that the thighs were fixed, or nearly fixed in this position—all movements at the hip joints being almost lost. On the inner side of the right groin, just below and external to the spine of the pubes, was a distinct prominence ; and upon careful examination this was found to be due to a rounded mass, which was plainly recognised as the head of the femur, and by some was thought to move slightly upon attempting to flex or otherwise move the thigh. The adductor longus muscle was seen to be stretched, and formed a round prominent line which extended from the pubes to the middle of the thigh. The buttock on this side was much flattened and flaccid. The great trochanter stood out prominently under the skin, and was approached to the ischial tuberosity. There was wasting of the muscles of the posterior surface of the thigh and of the buttock, and the fold of the buttock was almost effaced.

On the left side the great trochanter of the femur was displaced forwards and upwards, and was situated just below the iliac crest. The buttock on this side was much larger and fuller than on the right side, and the fold of the buttock was much deepened towards its inner part. On the back of the hip bone was a prominence, rounded and distinct, situated just above the cotyloid cavity. This was found to move slightly on rotating or otherwise moving the thigh bone, and was clearly felt to be the head of the femur.

There was a scar from an old bed-sore on the posterior surface of the sacrum, and another over the posterior superior iliac spine on the right side.

Along the middle of the right leg, over the subcutaneous surface of the tibia, there was a depressed area where the skin was adherent to the bone. In the centre of this was a sinus, surrounded by granulations, which led down to exposed bone. The tibia itself could be felt to be grooved and depressed, and its anterior border irregular and notched. In its lower third the tibia was much thickened and enlarged. Just above the internal malleolus there was a sinus surrounded by large granulations, leading down to a carious cavity in the substance of the bone. The ankle joint had been destroyed, and there was bony ankylosis between the astragalus and the bones of the leg ; the foot being fixed in an extended

and everted position. The patient was a well-nourished, fairly healthy-looking boy. There was no lividity or clubbing of the fingers. His temperature on admission was 99° F. His urine was normal.

The following was the history which was obtained:—Twelve months before admission he hurt his right foot by falling against a stone. This was followed by a severe illness which confined him to bed, and was accompanied by great fever and intense pain in the leg. Subsequently abscesses formed in the lower part of the leg, and have never healed. Six months after the commencement of his illness two pieces of bone were removed from the leg. The boy was reported to have enjoyed good health up to the time of the accident, and the family history was good. There was no history of consumption in the family. His social surroundings had been good.

There can be no doubt that this boy was suffering from displacement or dislocation of both thigh bones. The head of the left femur being displaced backwards and upwards on to the dorsum of the ilium, and that of the right femur forwards into the obturator foramen; or rather perhaps on to the front of the descending ramus of the pubes. The presence of the heads of the bones in their abnormal situations could be plainly made out, and the characteristic position of the limb pointed also to this condition. The only point, therefore, of interest which required investigation was the cause which led to this displacement taking place. It seems to me that there can only be one explanation of this, and that the sequence of events was somewhat as follows:—The boy, probably as the result of the injury, suffered twelve months before admission from “acute necrosis” of the right tibia, which confined him to bed, on his back. During this time he naturally assumed that position which enabled him to rest the outer side of his leg on the bed in order to prevent any pressure on the inflamed bone. In order to do this it was necessary to flex, abduct, and rotate outwards the femur of the affected limb, and this would cause the head of the bone to start somewhat from the acetabular cavity and press against the lower and inner part of the capsular ligament. In order to give greater ease to himself in this position, the opposite side of the pelvis would undoubtedly be raised somewhat, and he would rest on the right side of the pelvis to a greater extent than the left, and that he did do this is evidenced by the

presence of the scar of a bed-sore on the right side. Whilst in this position the left thigh would be necessarily rotated inwards, adducted, and flexed in order to support himself. This would cause the head of the femur on this side to press on the upper and back part of the capsular ligament; though probably not to the same extent as the head of the right femur pressed upon the lower and inner part of the capsule, on account of the greater depth of the acetabular cavity in this situation, but still probably sufficiently to produce a certain amount of stretching of the ligamentous structure surrounding the joint.

We know that in these cases of acute necrosis the inflammation, which probably begins in the periosteum, rapidly extends to the bone and the medullary membrane, and that a condition of osteomyelitis is set up which, in a large percentage of cases, terminates in pyæmia, and that free and early incisions give the patient the best chance of escaping this complication. We know also that should this condition occur, pyæmic synovitis is very liable to take place. Under these circumstances we get a rapid effusion into the synovial sac, attended by an infiltration and softening of the synovial membrane and capsular ligament, and very often a rupture of the synovial sac takes place and an extravasation of the effusion into the periarticular structures. It seems fair to assume that this condition existed in this boy, and this assumption is rendered the more probable by the fact that the patient was not under medical advice; or, at all events, no free incisions were made down to the bone.

We may believe, therefore, that we had this condition: The hip joints distended with fluid; the synovial membranes and capsular ligaments infiltrated and softened, and the heads of the bones pressing against these softened structures. One of two things would now probably happen: either the head of the bone pressing on the softened and distended ligament would cause it gradually to stretch, and so enable the head of the bone, though still contained within the cavity of the joint, to leave the acetabulum and become displaced in the manner described; or, what I think is more probable, the pressure of the head of the bone against the infiltrated and softened ligaments might cause them to give way and allow the head of the bone to pass through the openings thus made, and in this manner for true dislocation to take place.

It is only in this way that I can account for the deformity, and

it is well known that dislocations may take place in the manner described. For instance, Mr. Barker mentions a case under his care, in which during typhoid fever rapid effusion took place into the right hip joint, followed by softening of the capsule and slipping out of the head of the femur upon the dorsum ilii. In this case Mr. Barker succeeded in reducing the dislocation.\*

Shortly after the boy's admission, I removed two or three sequestra from the shaft of the right tibia, and also gouged out a carious cavity in the lower end of the bone. On May 24th I proceeded to perform osteotomy with the view of getting the legs into a less faulty position, as it was perfectly clear that with his limbs fixed in the position that they then were, all attempts to use them for purposes of progression would be useless. On the right side I cut down on to the neck of the femur, just above and internal to the great trochanter, and divided the bone in this position with a chisel. In the same manner I divided the shaft of the left femur just below the trochanters. The pelvis was then placed perfectly straight, and it was found that the legs could be brought into a fairly good position. There was still, however, a certain amount of adduction of the left thigh which it was impossible to overcome. And there was also very considerable shortening of the left leg. The operation was performed with antiseptic precautions. The limbs were put up in a Bryant's double splint. The patient went on well after the operation; the wounds were only dressed once, and healed without trouble. On July 20th (eight weeks after the operation) the splints were taken off and the limbs examined. Union was found to be still soft on both sides. The joints were put up in pasteboard splints. About the middle of August these were removed, and firm union was found to have taken place.

On two or three occasions an attempt was made to teach him to walk with crutches, but whenever this was done the sinus in the lower part of the right tibia, which had never soundly healed, began to discharge again freely, and the attempt had to be abandoned. Accordingly, after my return from my holiday, in October, I exposed the bone by an incision, and took out a piece, including the sinus, with a trephine. The bone was found to be exceedingly soft, so that the trephine cut its way into it with the slightest pressure. The opening, however, has never completely closed, and there is no doubt some carious bone still remaining.

\* 'System of Surgery,' 3rd edition, vol. ii, page 340.

His present condition is as follows:—The right thigh is in fairly good position. The remains of the head of the bone can still be felt in the groin, in the situation of the thyroid foramen, but it is not nearly so prominent as it was at the time of his admission. The trochanter is to be felt behind and below its normal position, and is  $2\frac{1}{2}$  inches from a line falling vertically from the anterior superior spine. On the left side, the position of the thigh is not so good ; there is still some adduction and inward rotation, which it was found impossible to overcome at the time of the operation, and there is, of course, very considerable shortening. The head of the bone is still to be felt very distinctly on the dorsum of the ilium, and the trochanter is very prominent,  $1\frac{1}{4}$  inches below a line falling vertically from the anterior superior spinous process of the ilium.

I cannot claim to have done much by my operation, but still I think I may say that I have done something by bringing his limbs into a more favourable position, and he is able now to walk with support, and I hope in course of time that he may be able to get about on crutches. One great impediment to his progression is the condition of the right ankle joint, which is ankylosed in a faulty position ; and I am inclined at some future period to see whether something cannot be done to remedy this condition by an operation which would aim also at removing more freely the diseased bone from the lower end of the tibia.

Mr. CARTER trusted Mr. Pick would show the case again after he had operated on the right ankle joint.

Mr. W. ADAMS said the case was a very complicated one, affecting both hips, and associated with necrosis of the tibia : the result was the best that could be obtained. With regard to treatment of the left hip joint by osteotomy, which operation should be selected ? The choice lay between Adams's operation (division above trochanters), Gant's (division below trochanters), and Rawdon's (excision of head of bone). In this case he would recommend the latter, which was easily done, and was followed by free motion. Cases of this nature occurred during rheumatic fever. Does the head of the bone pass out of the capsular ligament in these cases, as in traumatic dislocation, or does it merely slip on to the dorsum ilii with a distended but unruptured ligament ?

Mr. MORGAN said that the only gap he could see in Mr. Pick's explanation of the sequence of events was the fixation of the head of the bone. He had seen a considerable number of cases of dislocation of the head of the femur occurring in the course of rheumatic and other fevers. He saw a case recently, where on careful examination the mark of a small sinus was seen on the buttock ; an abscess had been opened here directly after birth, he wrote to the medical man who had attended the case for a history of this, but he could give none. He thought it might be a case of

infantile arthritis ; there was perfectly free movement of the bone in its new position. In a case under Dr. Barlow's care, reduction by traction under chloroform, and traction by heavy weights, had been tried without success ; he cut down on the bone and found the femoral head displaced backwards and upwards, the capsular ligament was stretched and tense but entire, the head of the bone was healthy, and no destruction of cartilage had taken place ; the acetabulum was almost entirely filled with granulation-tissue, the head of the bone was movable in its new position, and had formed a new shallow depression for itself. He cut a small slice off the head of the bone, to let it slip back if possible with traction ; this failed, and the bone remained in its old position none the worse for the operation. The false joint was now as good and movable as ever.

Mr. PYE had had the pleasure of seeing Mr. Pick's case both before and since the operation. He thought the photographs taken before the operation did not fully represent the amount of deformity. The case was handicapped by the prolonged confinement to bed, caused by the suppuration from the tibial caries. It threw light on the history of spontaneous dislocation, as it was probable that this case which might perhaps have been put down as acute articular rheumatism was really acute arthritis of pyæmic origin.

Mr. PICK in reply, said his object in bringing forward the case was to show the condition, and to endeavour to explain the way in which, given pyæmia and distended joints, the position produced the deformity. On the left side he might cut down and remove the head of the bone, but the operation he had adopted was simpler and the risk less. On the right side there were strong objections to removing the head because of its position beneath important structures. He could not say whether the condition was one of true dislocation or of displacement with distended unruptured capsule. He thought there must be capsular rupture on the right side because of the great displacement. Mr. Morgan's case was interesting and the condition clear. There was not absolute fixity in either joint but fibrous union with very slight movement ; before operating he had administered chloroform and used as much force as he dared without success. His view was that the inflammation of the joint had caused inflammation in the tissues around, with effusion of new material, which became fibrous and fixed the bone in its new position.

## RESECTION OF HEAD AND NECK OF FEMUR AFTER SPONTANEOUS DISLOCATION OCCURRING DURING AN ATTACK OF PYÆMIA.

By Dr. ARTHUR H. ROBINSON.

H. C., 43 years of age, widow, and following the occupation of needle-woman, was admitted into Mile End Infirmary in March, 1885, with the following history. At her last confinement, which took place in July, 1881, the labour being accompanied by some difficulty, an extensive laceration of the perinæum occurred. As a result of this there was subsequently prolapse of the uterus. For

the relief of this she went into the Metropolitan Free Hospital in August, 1884, and within a few days an operation was performed in the perinæum for the purpose of supporting the uterus. The same evening, however, a severe attack of secondary hæmorrhage occurred, and the operation-wound was of necessity re-opened. She was forthwith confined to bed for some time, and within a month of the operation all the symptoms of pyæmia were developed. Abscesses formed in the left hip joint, then in the right hip joint, and a third in the left axilla. She remained under treatment in the hospital until the end of February, 1885, when, owing to alterations in the building, she was transferred to Mile End Infirmary.

When first seen by me some weeks later, the right lower limb was shortened upwards of 3 inches, the foot being everted. The normal outlines of the right hip joint were gone, and it was impossible to ascertain the position of the great trochanter, owing to the extreme thickening and induration of the tissues overlying it. The woman was quite unable to raise the limb from the bed, and any passive attempts to do so caused her intense pain. At the upper third of the thigh and towards its inner aspect was a sinus, capable of admitting the forefinger, from which healthy-looking, inodorous pus flowed freely. On examination of this sinus, which passed outwards and backwards in the direction of the femur, no mischief to that bone could be made out.

The patient stated that up to the time of operation she had enjoyed the best of health. Her family history was good. There was no history of injury of any kind, and she first noticed the shortening and eversion of the affected limb about two months after the onset of her illness. She could not more nearly define the time at which such shortening actually occurred. She also stated that she had lost much flesh during the past few months, although she was still fairly well-nourished. She was in almost constant pain, for which morphia hypodermically was administered frequently. The only treatment hitherto directed to the hip was that of poulticing, which was continued, very large quantities of pus being discharged daily.

By the end of May, 1885, the condition of the patient was becoming daily more serious. Her appetite was very bad, and her digestion disordered. Her temperature stood persistently at 100°, and occasionally rose to 103° and 104°, with frequent copious

perspirations. She suffered also from occasional diarrhœa and vomiting, and these, with the constant pain she endured, were rapidly telling upon her. She readily assented to the proposal that something should be done to remove the cause of her suffering. It was therefore decided to expose the head of the femur, make an examination of the hip joint, being guided by the condition of parts as to what would be the best course to pursue further.

On the 7th of June, 1885, nearly seven months, as it would appear, from the time at which the head of the femur left the acetabulum, the patient being placed under the influence of chloroform, a longitudinal incision, some 4 or 5 inches in length, was made over the usual position of the great trochanter. A good deal of hæmorrhage occurred from the gelatinous-looking tissue met with. The head of the femur was at length exposed, very deeply placed, and lying on the dorsum ilii. No trace of capsule could be found, the head and great trochanter, denuded of cartilage and periosteum, lying in a large abscess cavity. The bone was very firmly held in its new position by dense fibrous adhesion, and much difficulty was experienced in dislodging it. By enlarging the incision and adducting the limb to an extreme degree, the head was eventually brought out of the wound, and the saw applied immediately below the small trochanter. The acetabulum was found to be filled with granulation tissue to a considerable extent. The wound was thoroughly cleansed with solution of perchloride of mercury, and its edges brought together with silver sutures. A large drainage-tube was introduced, and a smaller one passed through the sinus. The whole was dressed with Gamgee tissue, and the limb placed on a Liston's splint.

The patient rallied well after operation. All her previous symptoms abated within a few days, and she now suffered no pain. Her temperature gradually became normal. The discharge from the wound continued very profusely for some weeks, but by frequent change of dressings and copious syringing with the corrosive solution, the parts were kept fairly aseptic. The drainage-tubes were dispensed with at the end of five weeks, and at the expiration of two months both operation-wound and sinus were closed. The splint was used but a few days after the operation, the limb afterwards being steadied with sand-bags. Perfect rest was maintained for six months, and at the end of that time the patient was encouraged to attempt movement. Probably as a result of this

she had a rigor, followed by discharge of pus from the lower extremity of the operation-wound, which re-opened slightly. The discharge ceased in a few days, and from that time to this there has been no disturbance in the neighbourhood of the operation. She was kept in bed some four months longer and then allowed to sit up. Gradually she became able to bear pressure on the limb, and being provided with a suitable boot she was able to get about on crutches. Her attempts in this direction, however, were hindered by weakness in the left knee joint, which weakness still continues. It has been remedied somewhat by means of a leathern knee-cap, and she can move about with the greatest ease on the level. To-night she has with some assistance ascended the stairs to the Society's rooms.

*Remarks.*—I have brought this case before the notice of the Society, not only on account of its success as an operation, which has been almost beyond expectation, much of that success has doubtless been due to the soundness of the patient's constitution, though much may be attributed, also, to careful after-treatment, and, as it seemed to me at the time, to the use of corrosive sublimate as an antiseptic. The mature age of the patient is another point of interest when the statistics of operations of a similar nature about the hip joint are considered. The case also exemplifies the large extent to which the head of the femur may, when necessary, be removed, with the retention of a moderately useful limb. My chief object, however, in wishing to draw attention to the case, was owing to the primary cause of the dislocation; namely, pyæmia. Cases of pathological dislocation occurring during the progress of acute rheumatism and of typhoid fever, are fairly numerous in the records of the various societies; those in which the lesion has been due to pyæmic effusion into joints are, I believe, of considerable rarity; at least, I have not been able to discover their records. When such condition has been recognised at the time of its occurrence, or within some reasonable period afterwards, the malposition of parts has been rectified by simple measures. In the present case, it is obvious that no less severe means could have been adopted to restore the injured limb to anything approaching usefulness, whilst the precarious condition of the patient called for the radical removal of the cause of the hectic which was endangering her existence.

## TWO CASES OF ICHTHYOSIS HYSTRIX.

By Dr. WHITELAW BOURNS.

MARY D., aged 74. An only child, a widow, without children. Father and mother said to have been free from skin rash. The patient says her skin has always been dry and harsh, but not scaly. She sweats fairly freely when working hard. Health very good. No history of syphilis. Four years ago a rough, raised, and dry spot appeared on the front of the right ankle joint. Twelve months ago, she noticed a similar patch over the outside of the middle of the right leg, and soon afterwards her attention was drawn to a third patch, just below the left knee. The disease has steadily increased in size, without causing pain, but itching has been very troublesome, keeping her awake at night. Her trouble has not been influenced by the season of the year, being quite as bad during the summer months as through the cold weather of the winter.

Martha P., aged 27. Married, one child, whose skin is quite healthy. The patient is one of seven children, and she alone suffers from any skin trouble. Her skin has always been dry, she says she never sweats, no matter how hot the weather may be, but she has not noticed any appearance of scaling. From quite a child of a few years old, there has been a dry raised spot over the bend of the right elbow; also a patch on the left knee, which disappeared under treatment twelve years ago, and has not recurred.

The woman has attended at different hospitals and dispensaries, but in spite of treatment the disease on the arm has slowly increased in size, without causing any pain. During the warm weather it steadily improved, but in winter it rapidly got worse again. Health good. No specific history. Ten months ago, when the case came under my notice, it was characteristic of ichthyosis hystrix, notwithstanding the site, which is unusual. I tried the red oxide of mercury, without any good result. The patch was then painted a few times with the ethylate of sodium, but was discontinued owing to the pain, and a solution of equal parts of salicylic acid and creosote applied once a-week, with the best result.

## A CASE OF TREPHINING FOR A SUPPOSED ABSCESS IN THE TEMPORO-SPHENOIDAL LOBE.

By JAMES BLACK, M.B., F.R.C.S.

ALTHOUGH the title of the case which I bring before the notice of the Medical Society is that of "Trephining for a supposed Abscess in the Temporo-sphenoidal Lobe," I would at once state that from the outset a considerable doubt occurred in my mind as to the exact nature of the case, and I felt inclined to regard it rather as one of general pyæmia.

Henry Harris, aged 22, a lamplighter, was admitted into the Bouverie Ward of the Westminster Hospital, on November 30th last, under the care of Dr. Allchin. The note taken by the house-physician, Dr. Scott Saunders, at the time of his admission, was to this effect:—On the 27th instant (*i.e.*, three days previously), he shivered twice, felt very sick, but did not vomit. For some days he had not been feeling quite well, "had a dull sort of pain in the head, and lost his appetite." On the evening of the day upon which he shivered, "the headache became very severe;" it was confined to the frontal region, and has been getting worse ever since. He had always been a healthy man, but from a child had had a discharge from the ear, for which he could not attribute a cause; he had never had scarlet fever, rheumatic fever, small-pox, or syphilis. There was no history of a blow upon the head.

I have not been able to procure the notes of the physical signs on admission, but I believe they were indicative of a certain amount of bronchitis, and of some slight pleuritic affection. He was put on milk, beef-tea, ice, and lemonade, and had a cough mixture prescribed.

On the 8th of December (a week after admission) the thermometer registered a temperature of 104° F., at 4 A.M., but showed a decline to 99°, four hours later, and for the next three days there were elevations to 102°, followed by remissions; and on the 11th instant, at 12 noon, there was a rise to 104.5°, followed by a rapid fall to 99°, and on the day following he had his first well-marked rigor, lasting twenty minutes. He was ordered 3 ozs. of brandy, and the following mixture—

R Quiniæ sulphatis, gr. ij,  
Tinct. aurantii, 3ss,  
Acid. hydrobrom. dil. mx,  
Aquæ ad ft. 3i sextis horio sum.

The temperature mounted to 104° on the 12th, and 103° on the 13th, with a fall to 98° in the intervening period.

On the 14th of December (a fortnight after his admission) I was first asked to see the patient. He had then a very offensive otorrhœa from his left ear. After cleaning the external auditory meatus of pus, I detected a large perforation at the anterior part of the membrana tympani. By using a very fine probe, with absorbent cotton-wool tightly twisted around its end, I was enabled to remove much pent-up fluid from the tympanum. I ascertained from the patient that at the age of 17, he was so exceedingly annoyed by the offensive otorrhœa, that he used effectually to plug the external auditory meatus with wool, so as to prevent the escape of the fœtid discharge; this was naturally followed by inflammation over the mastoid portion of the temporal bone, and a sinus eventually ensued, from which matter for a time gained exit. He never sought advice for his ailment, but there was a depressed scar left at the site of the sinus, which was tender, and which bore out the veracity of the man's statement. Taking into consideration the repeatedly occurring elevations of temperature, and the fact of the man having had a well-marked rigor, I at once felt convinced of the serious nature of the case, and arranged to perforate the mastoid antrum on the following day, ordering in the meantime a saturated solution of boracic acid to be injected pleasantly-warm along the meatus every three or four hours.

On the 15th of December, at 1 P.M., the patient having been put under the influence of an anæsthetic, I made a crucial incision over the mastoid process, and reflected the soft parts down to the bone. Not being able to detect any signs of a previously-existing sinus under the depressed scar, I proceeded very cautiously to perforate the bone at the spot recommended by Mr. Barker,  $\frac{1}{2}$  inch "behind and above the middle of the external auditory aperture, in a direction forwards and inwards, so as to open the antrum, and at the same time avoid wounding the lateral sinus.  $HgCl_2$  solution (1 in 2,000) was syringed into the perforation, and as it was believed

that the fluid was seen to well up the external auditory meatus, there appeared to be no doubt of the operation having effectually opened up a communication with the cavity of the tympanum. No pus, however, gained exit through the opening made. At noon, next day, December 16th, the temperature rose to  $103^{\circ}$ , and as there was a tender spot over the mastoid process below the operation-wound, I made an incision here right down to the bone, and ordered hot boracic fomentations, in addition to the ear to be syringed with boracic lotion every two hours, and boracic acid powder to be blown into the meatus on each occasion ; a treatment that appeared to give temporary relief, but the temperature rose to  $104.2^{\circ}$  on the same evening, and again by reference to the temperature chart, it is noticed that a corresponding elevation was registered on the following day, viz., December 17th, when a severe rigor, lasting twenty-five minutes, occurred. I then met Dr. Allchin in consultation, and agreed that it would be wise to trephine for abscess in the temporo-sphenoidal lobe, and accordingly made arrangements with the friends on the day following.

On the 18th of December, at 11.45 A.M., having explained the nature of the operation to the patient, and obtained his consent, I had him put under the influence of chloroform ; under the carbolic spray, I first perforated the mastoid portion of the temporal bone a second time, deeming it possible that I might have missed the antrum on the first occasion, and that the appearance of fluid welling up in the external auditory meatus on syringing the first perforation might possibly have been delusive. I chose a point lower down, viz., opposite to the tragus for the second perforation, but this was as before without any desirable result, I therefore proceeded to dissect back the soft parts to the mastoid foramen, as advised by Mr. Barker, to detect if there was any matter thus obtaining exit, as might possibly occur if there were suppuration beneath the dura mater, corresponding to a thrombosed lateral sinus ; but as there was no such exit of pus, I proceeded to thoroughly syringe out the external auditory meatus and the perforations in the mastoid portion with boracic lotion, and dusted all the parts freely with iodoform, and then proceeded to make an incision upwards from the original wound, and dissected up a V-shaped flap of the soft parts, including the periosteum : the bone was perfectly healthy and normal in appearance.

With a trephine having a crown of the circumference of a six-pence, I carefully removed a disc of the skull,  $1\frac{1}{4}$  inches above, and only slightly behind the external auditory meatus. I chose this in preference to the spot selected by Mr. Barker, viz.,  $1\frac{1}{2}$  inches above, and a corresponding distance behind the auditory aperture, for I found that in a skull I examined this exactly corresponded to the position of a part of the course of the lateral sinus. The posterior branch of the middle meningeal artery crossed the middle of the hole made in the skull; this I cleared by cutting the dura mater on either side of the vessel, when I was able with a very much curved aneurism needle to carry a ligature across beneath the artery, and succeeded in tying it in two places, and divided it between. I then reflected the dura mater, which was normal in appearance, and exposed the brain, and with a perfectly clean aspirating syringe, pierced the cerebrum in a direction downwards and inwards slowly until it impinged on the bone. On drawing up the piston no pus appeared. The parts were then dredged well with iodoform and salicylic wool, with a covering of thin waterproof calico, applied as a dressing with a bandage.

As the patient had another severe rigor, with a temperature of  $104^{\circ}$  on the night of the operation, I next morning (December 19th) at Dr. Allchin's request opened up the wound under the carbolic spray, and, with the view of being more successful in tapping an abscess, again punctured the brain, this time using a perfectly clean canula and trochar of the size of a No. 5 Eng. catheter, and pierced the brain in two directions, firstly more inwards than at the operation on the preceding day, and, secondly, slightly more backwards, but with no better result. On the same afternoon he had a rigor lasting twenty minutes, and the temperature mounted to close upon  $105^{\circ}$ . The rigors were attended with copious sweating, and the patient was getting much emaciated; he had a dry brown fissured tongue and sordes on the teeth. Hot-water bottles and extra blankets were invariably used whenever the patient had a rigor, and he was always given a good stiff glass of hot brandy and water. I, now, with Dr. Allchin's concurrence, commenced to push the quinine, giving him at first 5-grain doses with dilute hydrobromic acid every six hours; a few days later, the same draught was given every four hours, and ten days later still the dose was increased to 7 grains every four hours, and this he continued to take for the succeeding eight days, when the quantity

was gradually diminished. A large amount of stimulants were simultaneously employed, 5 ozs. of brandy being given daily for close upon three weeks, and as much as 8 ozs. for the next four days, when the quantity was again reduced to 5 ozs. As much nourishment in the form of beef-tea, eggs, and some chicken as he could be got to assimilate was also given.

The healing of the wound progressed favourably in spite of the very severe constitutional symptoms, and, with the exception of the small sinus which still exists, was complete in about a month from the date of the operation. The external auditory meatus was syringed twice daily at first with a lotion of sulphate of zinc, glycerin, of carbolic acid and water, followed by an iodoform insufflation, and subsequently boracic acid lotion and fine boracic acid powder was used instead. For a fortnight after the quinine was pushed in large doses, although the temperature repeatedly shot up to 102° and over, and on three occasions during this period reached nearly to 105°, yet not a single rigor occurred, and the fact that quinine will effect this result I noticed mentioned in Erichsen. At the end of this time, however, *i.e.*, January 8th, a note taken by Dr. Humphreys, who had then come on duty as house-physician, states "there was a severe rigor at 4 o'clock this morning lasting thirty-five minutes, followed by profuse sweating; the tongue is dry, small, and red; there is impaired resonance at the right base behind, with prolonged expiration"; and a note on the following day adds "rigor at 5 A.M. lasting twenty minutes. Temperature taken after the rigor 105.8°; he was wakeful and very restless on the preceding night. The impaired resonance at the right base is extending towards the axilla, the resonance over the front of the chest is higher pitched than on the left side. The urine was acid, sp. gr. 1025, no albumen."

From this time, January 10th, the patient continued to improve, the quinine was reduced to 5 grains three times a day, and the brandy to 5 ozs.; and ten days later the ordinary Mist. Quiniæ with 2 grains in each dose was ordered, and the brandy reduced to 3 ozs. On January 25th there was a note taken to the effect that there was crepitation at both bases, more marked on the right side, and some ill-defined pleuritic friction at the right base. Cough more troublesome, and expectoration profuse. On two or three occasions the patient had pleuritic pain and some doubtful friction, when we always resorted to the rubefacient effect produced by a

large jacket poultice of linseed with a very liberal admixture of mustard, the result invariably being most beneficial. There had been a certain amount of bronchitis before admission, and there were generally râles and moist sounds to be heard on listening over the chest. With regard to the local condition, I may state that I carefully examined the ear on the 17th of January, as the nurse informed me there was more discharge, which was blood-stained and offensive. I detected an uniform yellowish-grey surface with a crimson patch, below and in front, which I took to be a surface of granulations with adherent pus, bestreaked with blood at the lower part. The sound produced by a vibrating tuning-fork applied to the root of the nose was principally referred to the affected ear, which demonstrated that the perceptive portion of the organ of hearing was still intact, and that the disease was limited to the conducting portion. A watch could not be heard on contact with the affected ear. On the 19th January I again carefully examined the ear, and removed a small granulation polypus with Toynbee and Hinton's forceps, syringed with carbolic lotion and blew in iodoform. On January 21st, pus was escaping in small quantity from the sinus at the centre of the cicatrised wound; this I ordered to be syringed as well as the ear. On January 27th on syringing the sinus, the fluid welled up in the external auditory meatus; this was the first time this phenomenon had been noticed with the possible exception of a similar occurrence having taken place at the first operation, and to which I have already referred. A probe passed in  $1\frac{1}{2}$  inches, and came on to a resisting surface, probably bone, but this was soft, and therefore without doubt covered with granulations. On the 18th of February all brandy was omitted, and as he had gained 12 lbs. in weight in a little more than a fortnight, and had a splendid appetite, he was allowed to leave the hospital, but was told to attend daily to have his ear and the small sinus watched. On one of these occasions I found he could hear the ticking of a watch a couple of inches off from the affected ear. I should mention that Mr. Cowell carefully examined the patient's eyes, but at no time did he detect any optic neuritis, but he noted a hyperæmia of the discs.

Two points of criticism naturally arise in connection with this case: firstly, was it justifiable to submit the patient to so severe a measure as trephining, when he was in all probability suffering

from a general blood-poisoning; and, secondly, could the case have been one of pyæmia when there were no secondary abscesses discovered. With regard to the first point, I only resorted to the operation of trephining after performing the operation of perforating the mastoid process twice without any apparent advantage; and, knowing of the life-long discharge of extremely offensive pus from the ear, made me agree with Dr. Allchin in thinking that it was possible the thin roof of the tympanum had become perforated by caries, and that an abscess had resulted in the superjacent part of the brain; and I would like to refer once more to the fact that before trephining, I dissected back the soft parts to the mastoid foramen to see whether any light might be ascertained by a possible exit of matter from this aperture. If the head symptoms had become more marked after the operation, I intended consulting Dr. Allchin as to the desirability of trephining for a possible abscess in the cerebellum, for I profited not only by Mr. Barker's recently-published case of successful tapping of a temporo-sphenoid abscess, but also by the very valuable paper by Mr. Hulk, published in the 'Lancet' this last summer, in which he recorded three interesting cases that had occurred in his own practice, where he trephined for abscess due to ear disease, and in which he strongly advocated a more active treatment than had hitherto been adopted in these cases. A valuable symptom Mr. Hulk drew attention to was a subnormal temperature in cerebral abscess, and I see this occurred not only in his cases and in Mr. Barker's, but also in the most recently-published successful case of Dr. Greenfield, which led to the very valuable discussion a week or two back at Glasgow. Even admitting that the symptoms were due to pyæmia, I conceived the possibility of a beneficial result accruing if the original focus of the disease were attacked, just as we find occurs when a large collection of pus is given exit in a case of infective periostitis.

It is quite true, at the time of the operation the head symptoms were by no means well marked, with the exception of the severe headache, for there were never any drowsiness, and as has already been noticed there was no optic neuritis, nor had there been any vomiting; but I concurred with Dr. Allchin in the belief that as the man was desperately ill, it would be very wrong to wait for such symptoms to arise.

Secondly, was the case one of pyæmia at all, and how could

it have been when there were no secondary abscesses discovered? Fortunately we do not observe a great number of cases of pyæmia now-a-days, but before the antiseptic treatment came in vogue I saw a good few, and I believe anyone who had seen the patient when he was suffering from the repeated and prolonged rigors, followed by the drenching sweats, and observed the leaps and bounds in the temperature chart, and marked the emaciation and dusky earthy complexion of the patient—would have felt convinced. Never at any time, however, did a joint become attacked, but the dulness at the base of the right lung will be remembered, as also the three or four separate attacks of evanescent pleurisy. An extremely offensive diarrhœa was also present, when he was at his worst. I imagine that the enormous quantity of quinine taken, and the large amount of nourishment and stimulants which were administered had most to do with the patient's recovery, but I cannot help crediting the active local treatment with some share in the beneficial result.

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*March 7th, 1887.*

A CASE OF PERFORATION OF THE SUPERFICIAL FEMORAL ARTERY AND VEIN BY ULCERATION FROM SLOUGHING AND SUPPURATING INGUINAL BUBO. PROFUSE HÆMORRHAGE. LIGATION OF THE ARTERY AND VEIN ABOVE AND BELOW THE SEAT OF LESION. DEATH ON THE ELEVENTH DAY FROM PYÆMIA.

By A. MARMADUKE SHEILD, F.R.C.S.

A SICKLY man of strumous aspect, 22 years of age, and a porter by occupation, was admitted into Westminster Hospital, on December 14th, 1886, suffering from chancroid on the penis and phimosis, with suppurating inguinal and femoral glands in the left groin. Previously he had enjoyed very good health. He had suffered from gonorrhœa six years ago, but had never contracted syphilis.

The man was circumcised, and the buboes in the groin were opened freely. The wound on the penis healed satisfactorily. The patient, however, did not progress favourably. He continued pale and anaemic, with severe pain in the groin, and shooting down the limb, with profuse and offensive discharge from the openings in the groin. The temperature was of the hectic type, and the patient's strength failed rapidly. Counter-openings were made, wine and liberal diet, with tonics, were administered internally, but despite all efforts the pus burrowed extensively. The glands were much enlarged and matted together, so that the patient's state, both locally and constitutionally, became daily more unfavourable.

He came under my immediate care on February 9th, 1887. He was then pale, emaciated, exhausted. The soft parts in the left groin were swollen, indurated, and evidently much diseased. Foul pus exuded from sloughy openings below Poupart's ligament, and in the inner aspect of the thigh. The patient was placed under ether, and I proceeded to slit up a few superficial sinuses. On introducing the finger into one of the openings, it passed downwards deeply into the thigh behind the femoral sheath, and entered a large and sloughy cavity behind and internal to the femoral vessels. This was full of pus, and dark clots of blood, which were expressed and sponged away. A large tube was passed in a probe into this cavity, with a view to drainage. It was now noted that blood of a venous hue, continued to well up to a significant extent from the sinuses. Again passing my finger into the cavity I felt it full of warm soft clot, like the contents of a diffuse aneurism. It seemed clear that some considerable vessel had given way by ulceration, and was bleeding into the cavity. The pulse in the tibials was unaffected. The opening was cautiously enlarged, when a profuse gush of clot and blood of an arterial hue, made it evident that the main vessels were implicated. A sponge was thrust into the wound, and digital pressure maintained over the common femoral artery, but this, owing to the condition of the soft parts, was ineffectual. As the blood continued to pour forth to an alarming extent, I passed two fingers of my left hand into the cavity and laid it freely open by an incision which reached from near Poupart's ligament to the apex of Scarpa's triangle, and directed along the inner side of the femoral and saphena veins. The large spongy cavity was held open, and sponged out

repeatedly. The source of the bleeding was now visible, and digital pressure directly applied controlled it. The rectal lever was applied to the iliac artery and answered admirably. It quite controlled the pulse in the femoral artery, and the vein, though bloated by the pressure of the lever, was compressed by the fingers and thumb. Next, by a tedious dissection from the inner side, I managed to isolate the femoral vein and artery for about one inch. This being effected the lever was raised from the iliac vessel, and a stream of arterial blood—the size of a crow-quill—issued from a small opening on the inner side of the femoral artery. On depressing the lever, the jet of arterial blood at once ceased. This arrest of bleeding and demonstration of its exact source were carried out by the same means. The artery in the immediate vicinity of the aperture seemed so healthy, that it was conjectured the lesion might be due to the ulceration of a branch close to the parent trunk. A silk ligature was placed on the artery above and below the ulcerated point, and then attention was directed to the vein. Thinking it better to isolate it from the artery, I divided the latter between the ligatures, and stripped its ligatured and retracted ends back from the vein. The latter vessel was, however, in a sloughy condition, and there was a rugged aperture in its inner wall which involved nearly half its circumference. I therefore tied it with the artery, at a safe distance above and below the sloughy part. The artery was thus included twice, once by itself, and afterwards with the vein. The second ligatures which surrounded the vein coincided with those surrounding the artery in position.

The operation thus briefly described was most tedious and difficult of performance. The parts were matted together by inflammatory material and sloughy tissues, enlarged glands adhered to the femoral sheath, and free venous oozing occurred from all parts of the large cavity. In addition to this, profuse gushes of blood came from the femoral vein, and it was only the desperate situation of the patient which led me to persist. The wound was washed out, sprinkled with iodoform, and plugged to check the oozing from the cavity. At the termination of the operation the patient was collapsed, but not to an alarming extent. By dint of warmth and a little stimulant he soon revived. The limb was wrapped in wool, and bandaged from the toes to the groin.

On the first day. The patient had passed a fairly good night

with the aid of morphia. There was free oozing from the wound, but no great foetor. He has taken nourishment freely. The pulse is 104, the temperature 102°. The foot was warm; sensation and movement in the toes is well established.

On the second day. The patient had again passed a good night, and expresses himself relieved by the operation. Pulse 104, temperature 102°. The wound was very foetid, and was dressed. The plugs being cautiously removed from the depths of the cavity, all bleeding was found to have ceased. The cavity was very foul, and pus poured into it from sinuses and loculi, and also from beneath Poupart's ligament. Indeed, there was quite obviously an extension of the abscess cavity beneath that structure. The wound was washed out with lotion and sprinkled with iodoform. It was then loosely packed with carbolised gauze, and drawn together with a spica bandage of the same material.

On the third day. The pulse was 130 and strong, the temperature 100°. The wound was less foul. Pieces of lint soaked in benzoin were packed into the more sloughy recesses of the wound. The man takes his food freely, and the condition of the limb, as regards circulation, is favourable.

On the fifth day. The man had a severe rigor, and his temperature at the time was 108°; pulse 136. Afterwards he sweated freely, and was very exhausted. He was apathetic and despairing, complaining of severe pains down the right lower limb, which is contracted and drawn up. Any attempts at straightening it caused him to cry out with pain.

On the sixth day. The patient had another rigor. The temperature was 106°, the pulse 140. The wound looked well, but the man was very prostrate, and there was a tendency to bed-sore on the left trochanter. There is some swelling, with local heat and pain, and a suspicion of deep fluctuation about the front of the right hip.

On the seventh day. The temperature was 103°, the pulse quick and weak. The man takes his food well, but seems weaker. Every effort is being made to keep the operation-wound clean and sweet. There is a pustular eruption on the right thigh and leg.

On the ninth day. The temperature was 104°; the pulse 140, and very weak. The man is in great pain, the right hip being flexed and swollen, and the limb being curiously everted, while the prominence of the trochanter was quite lost. Seeing his desperate

state, I resolved to make an attempt to reach the collection of matter which I believed to exist in the neighbourhood of the right hip. This I did by making an incision in the outer side of the femoral vessels, and separating the deeper tissues with my fingers. At length a foul abscess cavity, containing about a pint of thin brownish pus, was entered, and I enlarged the opening into it by means of forceps. The head of the right femur could be felt with the finger, denuded of cartilage and partially displaced forwards. On recovering from the anæsthetic the man was very exhausted, but was greatly relieved of his pain.

On the eleventh day the patient sank from exhaustion. Before his decease, he passed a quantity of foul pus per rectum. The discharge from the drainage-tube on the right side had been most profuse and offensive.

The general treatment may be briefly summarised. The patient had liquid and nutritious diet, with wine and brandy in appropriate quantities. Quinine in large doses and carbonate of ammonia were also administered, with morphia to subdue the pain.

The friends of this patient insisted upon removing his body beyond the reach of pathological investigation within a few hours of his decease. I was enabled, however, to examine the wounds in the mortuary, and to remove the femoral vessels. The head of the left femur was bare and carious, at the extreme bottom of the operation-wound. The head of the right femur was completely displaced towards the obturator foramen. The soft parts in the left groin were matted together by inflammation, and the glands were enlarged and caseous. As the knife passed through the tissues in removing the vessels, numerous small abscesses lined with black pyogenic membrane were opened. Indeed, the condition of parts was such as is seen in lung tissue when solidified with caseating and disintegrating tubercle. I could make no further investigation, and must conjecture that the discharge of pus per rectum was due to a pelvic abscess bursting into the gut, and probably connected with one of those below Poupart's ligament. The femoral vessels, carefully dissected, are handed round, and the preparation shows the following points. The superficial femoral artery is obliterated just below the profunda femoris vessel by a firm clot under  $\frac{1}{4}$  inch long. The lower end of the vessel is likewise sealed. The artery seems healthy. The wide interval between the ends of the vessel

is not all due to retraction after division, for a considerable portion of the vessel beyond the ligature has, of course, undergone disintegration. Both the ligatures had separated from the artery, and were loose in the wound. The vein is seen to be occluded by firm clots above and below. The ligatures placed round the artery and vein have cut through the former, but still retain their hold in the latter vessel. The portion of vein between the ligatures is sloughy and disintegrating. The orifice of the saphena vein is plainly seen entering the femoral above the clot.

I now propose to consider the leading features of this case, especially the causation of the hæmorrhage; to discuss the nature and fitness of the treatment adopted; and, lastly, to briefly relate the main particulars of similar cases, with some practical conclusions on the subject. And I shall strictly confine myself to the main points of interest in the case under discussion. I shall not speak of hæmorrhage from the groin in malignant disease, though I am cognisant of at least one case. I shall omit any reference to the treatment of these obstinate forms of ulcerating bubo, interesting though the subject be. I shall not touch upon the question of hæmorrhage from the great vessels in other parts of the body from sloughing in ulcerative processes; neither do I propose to deal with aneurismal affections of the arteries caused by the softening of their coats from external inflammatory influences.

The first point of interest in the present case is the obstinate nature of the suppuration and ulceration about the glands of the groin. Such a condition is sometimes seen in those of strumous diathesis, in the neck, axilla, or groin. In the latter situation such a condition may lead to disaster, as death from pyæmia, peritonitis, or implication of vessels. We can easily understand how vessels constantly bathed in pus of peculiarly irritating qualities may finally lead to inflammatory and ulcerative processes. Especially is this the case when they are unsupported by soft tissues, as obtains in an abscess cavity, a vomica in the lung, and some other conditions. In the case we are considering, hæmorrhages had occurred into the sloughy cavity round the vessel. The pressure of clot and the walls of the cavity served to retard the bleeding, but on displacement of the former, and enlargement of the aperture in the latter, the hæmorrhage burst forth with vehemence. I should be inclined to regard the destruction of the left hip-joint as due to spread of inflammation by contiguity of tissue. The sup-

puration and displacement of the right hip-joint was doubtless dependent on a bad pyæmic abscess, softening the ligaments and capsule of the joint, denuding the bones of cartilage, and so permitting the head of the femur to become displaced. All these are matters of great interest, but I will not further press them upon your notice.

As regards the treatment adopted in this case. When sudden and violent hæmorrhage occurred from the groin, the following methods suggested themselves:—Pressure with styptics might have been resorted to. This proceeding at best could only have been temporary, and was therefore disregarded. The iliac vessel might have been ligated. This plan, though tempting from its comparative easiness, would have been useless in venous hæmorrhage; neither would it have checked arterial bleeding from the distal part of the vessel or a large anastomotic branch. Amputation under the circumstances was scarcely admissible. Opening the cavity freely, and securing the vessels above and below the ulcerated portions seemed, therefore, the best course to adopt. Doubtless the rectal lever was of great use in this case, but it seriously increased the venous bleeding, and should such a case ever occur to me again, I should feel inclined to lightly apply Esmarch's apparatus with a strong elastic rope to the perinæum and buttock, as has been recommended for a method to check hæmorrhage in amputation at the hip. This idea crossed my mind in the present case, but I rejected it, for I feared that the pressure of the bandage might force pus into the pelvis or among the abdominal muscles.

I desire the opinion of members of this Society on the best mode of securing vessels when in a sloughy condition. Should artery and vein be ligated separately or together? It would also be a matter of great importance to know how a sloughy cavity is best to be rendered aseptic, for the dangers of septicæmia or pyæmia are not the least the surgeon has to contend with, and indeed these diseases may occur prior to the operation.

I would also draw attention to the great importance of making a very free incision when opening a hæmorrhagic effusion. This enables one to accurately determine the position and nature of the bleeding, and shape one's course accordingly. If the incision be made timidly a great deal more blood is lost, for hæmorrhage keeps welling up, and it is impossible to diagnose its source or to arrest it. The condition of the vessels in the specimen raises

a fair presumption that in this case the bleeding was effectually staunched.

The published accounts of this complication of *bubo* are not numerous, and the affection is doubtless a rare one. The late Mr. Callender, writing in 1869, says "that no such case has occurred in the practice of St. Bartholomew's Hospital for the past thirty years." Mr. Lowndes, of Liverpool, whose experience is very large, states that though he has been connected directly and indirectly with the Lock Hospital of that town for the past twenty-five years, he has never witnessed such a case, but he believes one to have occurred many years ago, the details of which are merely matters of tradition. "This is the more remarkable," he continues, "as we have every variety and every complication of venereal disease, including *bubo*es with much disorganisation of tissue." I have found five published cases, and one unpublished case, for which I am indebted to the courtesy of Mr. James Rouse. I cannot pretend to say that this list is a complete one. From what I have heard, I have good reason to believe that cases of this nature have occurred in military practice, and in the experience of surgeons attached to large hospitals, the details of which have never been formally published. But though the list is a small one, its details furnish us with a few suggestions of causation and treatment which call for passing remark. All of these cases occurred in males. The subjects of it were constitutionally unhealthy, either pale and delicate, or undermined by excess and alcoholism with *syphilis*. The septic action of the pus is well exemplified in the disintegration of the soft parts of the vessels, and even of the bones and joints. When once bleeding occurred it recurred, and this often in alarming amount. Pressure and styptics were quite inadequate to control the *hæmorrhage*. All the cases, with the exception of that under the care of Mr. Rouse, were fatal. In the latter instance the swelling was of an *aneurismal* nature, the blood being limited by a *sac* wall, though this was not of firm nature. Accordingly its consideration belongs rather to the category of *aneurism*. Even in this instance the patient only survived after passing through extremities of peril and danger, and after a long and tedious illness. Now, though these cases are so rare and exceptional that the experience of an individual must always be limited, and though the treatment of this formidable complication of *bubo* must be largely a matter of opinion, and

must ever vary with the consideration and analysis of the leading features of any particular case under notice; yet I feel I should have ill served the purpose of a paper like the present were I to omit the formulation of certain broad rules of treatment which might guide a surgeon in a similar emergency. I am deeply conscious of the difficulties of the subject and of the smallness of my own knowledge concerning it, but the opinions I have arrived at I will present to your indulgent consideration and criticism.

1. As in most serious maladies prevention is better than cure, the surgeon cannot be too urgent in his endeavours to early and thoroughly eradicate diseased glands when they pursue an obstinate inflammatory course unchecked by ordinary treatment. To this end sinuses must be laid open and all disintegrating gland tissue thoroughly extirpated by Volkmann's or Lister's spoon, the cavities being finally dressed from the bottom with such local applications as iodoform or chloride of zinc.

2. This complication of bubo may occur when destructive glandular disease associated with venereal infection has existed unchecked for a long period. Especially is it likely to happen when there is much sloughing and abscess formation with shooting pains down the thigh.

3. When once bleeding has occurred and recurred, it seems idle to trust to pressure, which has always failed. The surgeon will do well to at once adopt appropriate operative methods, and not wait until the patient is exhausted from repeated bleedings, or his condition rendered hopeless by a profuse haemorrhage which may occur at any moment.

4. Ligature of the iliac artery is not to be advised when haemorrhage is profuse externally or into the tissues, or when the bleeding is venous as well as arterial. It may be adopted when the blood is contained in a distensile pulsating sac, or when in the judgment of the surgeon the patient is too exhausted to bear the strain upon his vital powers necessitated by a prolonged operation at the seat of disease. If the iliac be tied for direct haemorrhage from the femoral artery, the surgeon must always be ready to deal with recurrence from the lower end of the vessel or a large collateral branch.

5. That in operating at the seat of disease, considering the difficulty of dealing with the haemorrhage, it would be well to render the parts exsanguine by an Esmarch's bandage not too tightly

applied. The vessels should then be carefully isolated and dissected, and tied well above and below the diseased parts.

6. That this complication of bubo is likely to be followed by a fatal result from recent bleeding, from exhaustion, or from septic disorders, notwithstanding the best efforts of modern surgery.

Number of Case.	Description.	Name of Surgeon.
I	Ulceration of the common femoral artery and vein, treated by pressure, with a fatal result.	Callender.
II	Ulceration of the femoral artery and vein. Ligation of the external iliac, followed by gangrene and death.	Poore.
III	Bleeding from a sloughy cavity of the groin, treated by plugging and ligation of common iliac. Death.	De Lisle.
IV	Profuse venous bleeding, recurring many times, from the groin in a case of ulcerating bubo. Pressure and plugging. Death.	Nivison.
V	Profuse venous haemorrhage from the groin. Ligation of femoral vein and of femoral artery. Death.	Aron.
VI	Aneurismal swelling in connection with the common femoral artery from ulcerating bubo. Ligation of external iliac artery. Recovery.	Rouse.

**CASE 1. Age and Sex.**—Male, aged 18.

*Nature of Case.*—Ulcerating and sloughing bubo in the left groin, after soft chancre. The lad was pale and delicate, from time to time venous oozings occurred, terminating in two profuse bleedings, which caused the lad to sink.

*Treatment.*—No radical treatment was adopted.

*Result.*—Died.

*Post-Mortem Appearances.*—Ulceration had destroyed about 1 inch of the femoral vein, just where the common femoral artery bifurcated was a circular opening about two lines in diameter.

*Reference.*—Callender, 'Pathological Societies' Transactions,' vol. xx.

*Remarks.*—In this case repeated bleedings seemed to have occurred from time, and when profuse haemorrhage set in, the lad was too exhausted to bear operative treatment.

**CASE 2. Age and Sex.**—Male.

*Nature of Case.*—A sailor suffered from chancroid, for which nitric acid was applied. The sore healed. There was a suppurating bubo in the left groin, which was opened. Obstinate ulceration succeeded, which

defied all remedies. Two months after arterial haemorrhage occurred and recurred.

*Treatment.*—At first a compress was applied. As the bleeding recurred in two days, Dr. Poore tied the external iliac artery. This checked the bleeding. Gangrene supervened; a line of demarcation formed near the knee, and amputation of the thigh was performed. The man sank from exhaustion.

*Result.*—Death.

*Post-Mortem Appearances.*—The external iliac vessel was superficially ulcerated. The femoral artery was extensively destroyed, two-thirds of its walls for 4 inches of its course. It contained a thrombus which extended to the seat of ligature. The femoral vein was perforated by an oval ulceration,  $\frac{1}{16}$  inch long,  $1\frac{1}{2}$  inches below Poupart's ligament.

*Reference.*—‘New York Medical Journal,’ vol. xxx.

**CASE 3. Age and Sex.**—Male.

*Nature of Case.*—A strumous lad had been under the care of his surgeons for more than three months for chancre, followed by suppurating bubo in the right groin. Had a sudden and profuse bleeding, losing about 15 ozs. of blood. Haemorrhage recurred several times.

*Treatment.*—A cavity was laid open and plugged. The haemorrhage was arrested for ten days. Then, in spite of pressure, the bleeding recurred at intervals, the patient losing quantities of blood, estimated at 8 or 10 ounces. Finally, he had a profuse bleeding, estimated at 16 ozs., and the external iliac artery was cut down upon; as it seemed unsound, the common iliac was tied. The man survived thirteen weeks, and then died of exhaustion.

*Result.*—Death.

*Post-Mortem Appearances.*—The right hip-joint was diseased, the head of the femur being denuded of its cartilage. The common iliac artery was well sealed, but the exact source of the bleeding was not determined.

*Reference.*—‘Army Medical Department, Statistical Reports,’ 1860. De Lisle.

**CASE 4. Age and Sex.**—Male, aged 33.

*Nature of Case.*—“A case of invidious and violent sloughing in the right iliac region, terminating in fatal haemorrhage.” The patient had his constitution undermined by alcoholism and debauchery. Was admitted on March 23rd, 1830, with suppurating bubo in each groin, and a syphilide (?) on the body. “There was nothing abnormal observed in the sores.” Thirty-eight days after admission venous haemorrhage occurred and recurred for about thirty days. Finally he lost a quantity of blood, estimated at four pounds, and sank.

*Treatment adopted.*—Pressure and plugging were constantly resorted to.

*Result.*—Death.

*Post-Mortem Appearances.*—Acetabulum diseased. Head of femur denuded of cartilage. A sloughy cavity extended above Poupart's ligament to sides of lumbar vertebræ. The whole of the femoral artery had shared in the destruction, and the epigastric and circumflex vessels had quite sloughed away. The veins were indurated as to their walls, but pervious.

*Reference.*—‘Edinburgh Med. and Surg. Journal,’ 1831, vol. xxxvi. J. F. Nivison, Surgeon to the Forces.

CASE 5. *Age and Sex.*—Male.

*Nature of Case.*—Phagedænic bubo, followed by ulceration into the femoral vein. The bleeding occurred suddenly and profusely.

*Treatment.*—An attempt was made to place a “lateral ligature” on the femoral vein. It was found that the aperture in the vein was too large and sloughy to do this well; finally a ligature was passed round both artery and vein. The patient died with symptoms of exhaustion from haemorrhage an hour after.

*Result.*—Death.

*Post-Mortem Appearances.*—Three ligatures were found in the vessels. One “lateral;” another round the vein, but not above the ulceration; a third round both vein and artery.

*Reference.*—‘Gazette des Hôpitaux de Paris,’ 1873. M. Aron.

*Remark.*—In this case, the surgeon seems to have been baffled by the profuse and sudden bleeding, and the absence of good assistance.

CASE 6. *Age and Sex.*—Male, aged 28.

*Nature of Case.*—This man had constitutional syphilis, and was admitted with an irregular excavated ulcer, the result of bubœ, in the right groin. Hard diseased glands projected into the wound. Around was much induration and tenderness. There was a papular syphilide on the body. His symptoms consisted of severe pain shooting down the limb, with redness and swelling in the neighbourhood of Scarpa’s triangle. On the seventeenth day after admission, a rapidly increasing swelling with pulsation and bruit was evident in Scarpa’s triangle.

*Treatment.*—Ligature of the external iliac. After operation pulsation ceased. Pulsation in the tibials was noted on the 7th day. The ligatures separated on the 15th day. The ulcerated wound in the groin continued to discharge freely, but the swelling continued. On the 42nd day after the operation, a large slough was removed from the groin, and this was followed by a gush of blood, estimated at about 10 ozs. The sloughy cavity was now laid open, and the femoral artery was tied below the bleeding-point;  $\frac{1}{2}$  inch of the vessel had entirely sloughed. More haemorrhage occurred from a large anastomotic branch; this was also tied. Bleeding recurred twice after this, and was stopped by pressure.

*Result.*—Recovered, after a long and tedious illness.

*Reference.*—Mr. James Rouse, ‘St. George’s Hospital Registrar’s Reports’ for 1877.

*Remark.*—In this case, the swelling was of a distinctly aneurismal nature. Pulsation was so marked that there must have been a distinct limiting sac wall, so that ligature of the iliac artery was in accordance with the rules of surgery.

Mr. CARTER trusted that many of the eminent surgeons he saw present would favour the Society with their opinion on the case.

Sir W. McCORMAC congratulated Mr. Sheild on the result he had obtained. Such cases were among the most difficult a surgeon could be called upon to deal with, and he had met with that success which he deserved. Cases of suppurating bubo opening into the femoral vessels were rare. He quoted an instance in a man 40 years of age, who had been exhausted by syphilis and alcohol. He had extensive ulceration in the groin involving the femoral vein; this was inefficiently controlled by pressure, and the man died. Ligature of both main vessels did not seem of necessity to cause gangrene. Was there any alteration in the circula-

tion during the first few days? Braune in 'Langenbeck's Archiv' mentioned a number of cases of double ligature; in a large proportion there was no alteration of circulation in the limb below. When the operation was performed for serious secondary haemorrhage, a large number terminated in gangrene. He referred to another case under his care in which there was an abscess round the femoral vessels; he opened it and found that it spread under Poupart's ligament. He supposed that he scraped the wall of the femoral artery in making the incision, for one month afterwards that vessel gave way. The haemorrhage was controlled by pressure, but it recurred; the wound was then opened up by Mr. Pitts, and the bleeding point secured by tying the artery above and below; in doing this the vein was accidentally wounded, and a double ligature was consequently placed upon the latter vessel; this procedure was followed by no serious disturbance of the circulation. Stromeyer says that such an accident calls for amputation at the hip-joint, but this case shows that that is not necessary. He agreed with Mr. Sheild that pressure was an uncertain method of treatment, only temporarily arresting the bleeding. A free opening to expose the source of haemorrhage was better. Where the artery was softened by inflammation, separate above and below, and tie the vessel wall at a healthy spot; this was a better practice than tying the diseased ends of the vessel. With regard to the selection of a disinfectant there were different opinions. For a foul, sloughy cavity he believed that sublimate solution was the most effective and powerful antiseptic we possessed.

Mr. BERNARD PITTS would like to say a few words about the case to which allusion had been made by Sir William McCormac. The boy was admitted with an acute abscess above Poupart's ligament. It was first aspirated. Shortly afterwards a double swelling appeared in the upper part of each thigh. Incisions were made, and the temperature came down. A month afterwards an attack of haemorrhage occurred from the left leg from an opening over and to the inner side of the vessels. He opened the wound and explored, but could find nothing; the haemorrhage stopped. The antiseptic dressings were left off and the wound covered with wet lint and watched. In two days sharp haemorrhage occurred which was controlled temporarily by digital pressure. He opened up the wound and found an aperture in the femoral artery 1 inch below the profunda. He ligatured the vessel above and below, and divided it between: whilst engaged in doing this latter pus welled up and obscured his view, and it was then that he nicked the vein, and followed this by placing a double ligature on it. The limb was cold for a few days, then warmth returned, and the boy made a good recovery. He saw the patient six months after; the leg was then slightly smaller; there was no difference in the temperature. He could not explain the apparent double psoas abscess. It was acute, and was accompanied by no spinal disease. He advocated a preventive treatment of bubo; sinuses should be slit up, glands removed, and antiseptics used. He would also severely cauterise or use a continuous bath if much pus were present. He had seen many cases of severe phagedænic ulcers and had never regretted a free application of Ricord's paste. There did not seem to have been much ulceration of the skin in Mr. Sheild's case.

MR. PICK referred to the fact that haemorrhage from ulceration into great vessels occurred almost exclusively in the femoral and carotid regions. Why did it not also happen in the axilla? He believed the reason to be the implication of the deep glands beneath the dense fasciæ

of these regions. They suppurated, pressed on the vessel-wall, and caused ulceration and haemorrhage. That this might occur was shown from the case of a man under his own care who had suppuration of the superficial glands of the groin followed by deep suppuration beneath the fascia, the pus made a sinus completely through the thigh to the buttock. In a case of suppuration of the carotid glands following scarlet fever, he had seen the pus bound down by the deep fascia press upon and ulcerate into the main vessel. He thought Mr. Sheild's treatment was correct. He himself had been called to a patient with a large abscess cavity in the neck from which arterial blood was spurting. It was temporarily controlled by digital pressure, whilst the cavity was laid open and the vessel ligatured at a healthy spot below the opening in it ; the patient got well. That ligature of both artery and vein should not, as a rule, be followed by gangrene, upset his previous notions. He had been in the habit of teaching that if in a case of ligatured artery the vein became blocked, it would be almost always followed by gangrene.

Mr. HARRISON CRIPPS referred to the paper he had published in the 'St. Bartholomew's Hospital Reports' for 1874, containing details of fifty-four cases of femoral ligature for haemorrhage. There were four different methods of treatment : ligature of the external iliac artery, amputation at the hip-joint, ligature of the bleeding ends of the vessels, and pressure. Of thirteen cases of ligature of the external iliac artery only one survived, twelve died either from recurrent haemorrhage or from gangrene of the limb. Amputation would only be proposed as a last resource ; in some desperate cases it appeared to be the best method of treatment. To look for the bleeding ends was very difficult, it involved a long operation and often failed. He believed that from the first we should trust to pressure and bandaging. Of seventeen cases treated thus, thirteen were successful. The proper method of procedure was to distribute the pressure carefully above and below the bleeding-point—especially below. A bandage of soft domette should first be evenly applied from the feet upwards, ending in a spica at the groin, and leaving the wound uncovered. Two cedar pencils should then be covered with lint, and they should be placed along the line of the vessel, one above and one below the wound ; then a splint should be placed along the whole length of the limb outside, and it should be carefully and firmly strapped on. Next, a conical pad should be placed over the wound itself, and secured with another strap. In this way one could easily control the haemorrhage and regulate the pressure. If the pressure should fail, one could then cut down and find and tie the bleeding vessel.

Mr. BLOXAM had had two cases, one in a woman—the other in a man, of haemorrhage following a sloughing bubo in the groin ; both died, though in both pressure was the method of treatment adopted ; in one the opening was found in the femoral artery alone, in the other it involved both artery and vein. He remembered a case published by Mr. Morrant Baker, in which the gluteal artery opened into an abscess of the buttock ; and another case occurred at Charing Cross, in which the iliac artery opened into a psoas abscess, and caused fatal haemorrhage. There were very small external openings in both his cases, and one only found the extent of the cavity on incision. He had often seen abscess running up and down along the arterial branches, the ulceration dipped down in the cellular tissue round the enlarged glands. He did not think treatment by pressure was of any good, the best plan was to lay freely open and secure the vessel where healthy. He had seen both the artery and vein

ligatured, and gangrene did not follow. He remembered a case in which the popliteal artery had been ligatured for aneurism ; the ligature was pulled at every day to see if the ligature had separated, and one day furious secondary haemorrhage occurred. Sir William Lawrence, who was then 82, was sent for, and he tied the femoral artery with the vein and nerve in one ligature ; fatal gangrene followed. Many cases were on record of double ligature in this situation without fatal result.

Mr. Lockwood said that cases where the femoral artery and vein were ligatured for aneurism, or where the limb was infiltrated with blood, were commonly followed by gangrene, and should be classified separately from those cases of ligature for ulceration into the great vessels.

Mr. BRYANT said that cases of ulceration into vessels consecutive to bubo were very rare. He had seen haemorrhage in association with suppurating cavities in this region, but he had never seen both artery and vein involved. The difficulty of treatment rested in the diagnosis. No one, he thought, would hesitate a moment to open up the wound, expose the source of bleeding, and tie both vessels, if one could be sure of the source of the haemorrhage. He had seen three cases of inguinal suppuration associated with copious haemorrhage ; they were all treated with well-applied pressure, and all got well. In each of these cases, so far as the extent of the haemorrhage and the symptoms went, they suggested that both the femoral artery and vein were involved. Ought the surgeon here to have explored the abscess cavity and looked for the bleeding point ? For his part he thought the surgeon right for using the minor method, especially as it was successful. But granted the diagnosis of involvement of both vessels, he thought that even Mr. Cripps would not hesitate to cut down and secure them. In secondary haemorrhage following ligature of the artery in its continuity, the bleeding came from the lower end, and could be controlled by pressure, and the vein was intact. The two classes of cases were perfectly distinct. Large veins might be dealt with surgically with far less risk than was formerly thought possible. The axillary vein was now often tied, so also was the internal jugular. Did not ligature of main artery as well as the main vein diminish the risk of gangrene ? Some German surgeons had said that if the femoral vein were injured both vessels should be ligatured ; if both were wounded, then of course both should be tied, but he thought that in injury of the main vein few surgeons would interfere with the sound arterial trunk also. He regretted that the subject of secondary haemorrhage following ligature of the artery alone should have been mixed up with the discussion on this case.

Mr. CARTER remembered years ago a great controversy arising out of a duel fought near Portsmouth. One of the combatants, a fat man, received a bullet in the groin, some days afterwards haemorrhage occurred in the track of the bullet. Liston tied the external iliac, and the man ultimately bled to death. Guthrie, referring to this case, said that had the surgeon cut down and tied the bleeding-point, the man's life would have been saved. In the medical journals of about thirty-five years ago much literature would be found on the subject.

Mr. SHEILD, in reply, said that whether gangrene followed double ligature depended on the presence of aneurism, the condition of the heart and vessels, or whether the superficial or common femoral artery were ligatured. In his case the profunda femoris remained patent, and also the internal saphenous vein and this, so to speak, had equalised the circulation. For irrigation of a septic cavity he thought corrosive sublimate

well worth trying, but the danger of pyæmia and septicæmia was great. Mr. Pitts spoke of the value of cauterisation, he was right if the case were phagedenic, but his was one of obstinate suppuration in a man of strumous cachexia, and this latter was the type of case in which haemorrhage was likely to occur. He thought that ulceration into a vessel occurred usually under two conditions, either when the vessel was in contact with septic pus, or when it rubbed against diseased bone. He thought treatment by pressure was out of the question unless the ulceration were very limited. He had frequently seen pus burrow along the course of vessels and nerves. He referred to the case of a Cambridge undergraduate, who shot himself through the leg, there was haemorrhage on the eighth day, the leg was raised, and direct pressure applied to the femoral trunk ; the case recovered.

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March 14th, 1887.

## CLOTTAGE OF THE URETERS.

By E. HURRY FENWICK.

I CONFESS that the title of my paper smacks of the pathological rather than of the clinical, and is neither euphonious nor scientific ; but I was at a loss for a briefer and more explicit heading. I feel confident that, in the course of the criticism which I hope to evoke, the subject will be rebaptised with a neater and more appropriate name than the one I have chosen.

By "Clottage of the Ureters" I mean a definite and determinate endeavour on the part of the surgeon to "cork" an ureter with a clot of blood. An operation which I submit ought to be performed, if possible, when we have to combat a dangerous and an *ungovernable* haematuria from a kidney, hopelessly damaged either by accident or disease. In the profuse and unrestrainable haematuria which sometimes obtains in cases of hopelessly crushed kidney, we ought to have at our command some conservative measure which should rank in position immediately in front of the grave operation of nephrectomy. Again, in advanced renal carcinoma with co-existing recurrent haematuria of a *sapping* character, it is obviously important to prevent if possible that drain of blood-capital which exhausts, depresses, and shortens our patient's life. This becomes a more serious question when we consider the statistics of nephrectomy for carcinoma of the kidney. The

mortality of the operation is 69 per cent. (Weir); whilst of those surviving 31.5 per cent. had recurrence (Gross), and in these latter the average duration of life after removal was twenty-four months. Röhrer and Roberts assert that the average duration of life without operation is two and a half years; and we submit that if the drain of blood which is generally found in these cases be checked, that term would be lengthened.

I am not aware that either a suggestion or an attempt has as yet been made to carry out the procedure which I now advocate, but I do not doubt the idea must have occurred to many surgeons who have watched cases of traumatic renal haematuria, and who have noted that an uncontrollable and profuse haemorrhage has abruptly ceased; the autopsy of these cases has proved that the sudden termination of the haemorrhage has been due to a clot of blood obstructing or "*corking*" the corresponding ureter. A case in point will be found in the 'Pathological Transactions,' vol. xi, p. 160. It refers to a lad under the care of Mr. Holmes, who had suffered from a rupture of the kidney. If this occurs naturally, why should we not attempt it artificially? Are not most of our operative interferences for aneurism merely imitations of natural cures?

Permit me, therefore, to relate to you the steps by which I arrived at the operation which is the *raison d'être* of this communication.

In 1884 I was requested by one of my colleagues at the London Hospital to see a case of profuse haematuria and to suggest treatment. I found a lad, aged 19, who had been struck on the right side by the wheel of a cart. He was bloodless and breathless. The seventh and eighth ribs on the right side were fractured, and surgical emphysema had resulted. But in addition to the symptoms accruing from the lesion of the lung, there were evident signs of profound depression arising from an ungovernable and profuse haematuria. Seeing how exhausted the lad already was, I proposed that an attempt should be made to imitate the clotting in the ureter which I have just described. That, if it failed, nephrectomy should be performed; for it was evident that the kidney was crushed beyond repair, and that the dangerous cystitis which generally results from clots collecting in the bladder had not supervened. I thought that the operation could be performed by introducing my ureter-aspirator into the bladder, which, after

sucking a little liquid blood down the right ureter, could compress the right ureteral opening and thus allow of the clotting of that blood in the canal. The suggestion was not taken. The blood clotted in the bladder, acute cystitis supervened, and the boy died from acute surgical pyelo-nephritis thirty-one days after the accident. Autopsy showed the right kidney to be surrounded by a thin layer of decomposing clot, and to be hopelessly crushed and suppurating. The renal change which I had hoped to induce by the operation was that found in Mr. Holmes's case ('Path. Trans.', vol. xi). "The cellular tissue around the right kidney was much consolidated; and on making a section of the gland a large clot of blood was seen to occupy its pelvis and interior, communicating also with the exterior, where a considerable quantity lay in the sub-peritoneal cellular tissue. The line of rupture could be faintly traced through the substance of the gland."

Whilst I was patiently waiting for a case in which I should feel justified in attempting to carry out my suggestion, I was asked by a surgical friend to assist him at a case of supposed vesical growth, in which cystotomy had been proposed to, and accepted by the patient as the only means of relief from an uncontrollable haematuria. I had not the opportunity of carefully examining the patient, but I was shown his urine. It was of a bright arterial colour and clotted; a urine which one would, on superficial examination, pronounce to be of vesical site and most probably of neoplastic origin. The patient had no pain. He was 61 years of age, and the symptoms had lasted eight months. The prostate was not enlarged. On cystotomy being performed, the bladder was found free from growth, and the patient died after a severe attack of suppression of urine. I was asked to make the post-mortem, and the specimen is here to-night. You will see that the bladder is quite healthy, but that the right kidney is transformed into a mass of encephaloid cancer. There is no doubt that blood had rapidly poured down the ureter, had entered the bladder, and had as rapidly been expelled therefrom. The weight and the alkalinity exciting a contraction, and thus a renal haematuria simulated one of vesical origin.

In September, 1885, there came before me at my O.P. room at St. Peter's Hospital for Urinary Disease, the patient who is the subject of this paper, and I would give his case in detail as it is, to my regret, an incomplete one.

H. L., æt. 53, a healthy man up to July 31, 1884, though he had suffered for six years from occasional attacks of "liver" and from slight gouty (?) pains in his right great toe. Never had syphilis. Of alcoholic tendency.

On July 31, he left a newspaper office, to which he was reporter, at 12.20 A.M., and went to a public-house. He was sitting quietly with his back supported, when two of his colleagues began wrestling; and slipping, they fell with their united weight upon him. The shoulder of one of them struck him in the sternum near the ensiform cartilage. He received a severe shock, but gradually recovered. He cannot say for certain if his bladder was empty, but he believes he had passed water a little time before, as it was his custom to do so on leaving his work. He went quietly home, undressed in the dark, and before getting into bed passed as he believed a little water. He was awakened in two hours' time, it then being daylight, by a call for micturition, and got out of bed to pass water, when he noticed to his surprise that he had not passed any water the time before but only a small clot of blood; after a little straining he passed a quantity of plum-coloured blood. He had no pain, and says if he had had his eyes shut he would not have known that it was blood.

He went back to bed and was immediately seized with violent pain in the right side and commenced vomiting. The pain, bleeding, and vomiting continued ten hours.

The attack gradually passed off, and he was unwell for three weeks, but there was no recurrence of the haemorrhage.

In six weeks after the first attack retention suddenly occurred, and catheterisation relieved him of half-a-pint of blood and urine. The haematuria continued a few days and then stopped. He was examined for stone, stricture, and prostatic enlargement, and was diagnosed as a case of enlarged liver.

The haematuria, however, returned in three weeks' time, after a journey by train; and he was taken to St. Bartholomew's for consultation. The surgeons believed the case to be one of calculus in the right kidney. It is, however, noteworthy that he had no pain in the kidney or starting of the right testicle; that the onset of the haematuria followed a blow; that the haemorrhage was always sudden, profuse, and frequently causeless; that he suffered no pain except when the clots were passing; and that he never had had symptoms of gravel or grit in the urine.

He was taken to Guy's, and there examined in consultation. The opinion expressed there was to the effect that no organic disease existed either of the kidneys or the bladder. The patient now tried homœopathy, and seems to have taken most haemostatics without effect. He now began to have pain in his right side, and applied at St. Peter's for relief on September 7, 1885, thirteen months after the onset of the symptoms. My notes are as follows:—

A large, fat, heavily-built anaemic man of 53 years of age, acne on face, whitish hair, liver slightly enlarged; no renal tumour; no stone in bladder; no stricture; prostate small for age. He brings a bottle of scarlet haematuria. Pain in right side (renal). *Haematuria passive.*

My diagnosis was traumatic malignant growth of the right kidney, and I placed him on a haemostatic which slightly relieved him.

In three weeks, however, September 28th, the bleeding recurred with such violence that I spoke to him seriously about the necessity of nephrectomy if clottage of the ureter could not be brought about.

On October 5th he accepted the latter proposal, and came to my house the same evening for that operation. Dr. Duffy, of New York, was present. After washing out the bladder three times, I injected into it a couple of drachms of a 20 per cent. solution of cocaine. I then introduced my ureter-aspirator ('Lancet,' September 18th, 1886), and applied suction to the right ureteral opening.

After a few minutes I made a little counter-pressure by means of my finger in the rectum, so that I nipped the ureteral opening between the instrument's beak and my finger. After ten minutes I closed the catheter's mouth with my finger and withdrew it. The beak and mouth of the instrument was entirely filled with clot, which slipped out of the catheter as a long worm-like decolorised body. It had evidently been sucked down the ureteral canal. Had I plugged the ureter?

My hopes were rather dashed next morning by receiving a letter from the patient saying that he had passed blood in his water on reaching home. I hoped this was due to the bladder instrumentation, and I believe the sequel of the case warrants me in assuming that I had succeeded in plugging the ureter, for *from that date*

*until his death, six months after, there was no recurrence of the hæmaturia*, and this, although the hæmaturia for fourteen months previously had been violent and persistent.

Twice or thrice he brought me little blackish clots, which varied in size from a grain of wheat to a red currant berry, and on October 9th (a fortnight after the operation) he had an attack of increased reno-ureteral pain, which was relieved by hot brandy and water. Two hours after he passed an inch-sized worm-like clot of white colour. I construed this attack to mean recurrence of haemorrhage into the kidney, and an attempt of the pelvis to overcome the obstructing clot, a small part of which did come away.

He now gained health, strength, and weight, but towards the end of December, 1885, he lost ground and became cachectic; and on January 4, 1886, I discovered, what I had frequently examined him for, viz., a large non-pulsatile, right-sided renal tumour.

The pain in the back now increased, the appetite got capricious, he lost weight and strength, and his friends sent him to consult Dr. B. Ward Richardson. Dr. Richardson very courteously agreed to see the patient with me, as our diagnoses differed, for he had discovered an abdominal murmur (which I had pronounced to be due to the pressure of the tumour on an atheromatous aorta), and on the supposition that there was an aneurism of the renal artery, had administered iodide of potassium.

As we neither of us were inclined to accept the other's diagnosis of the case, we decided to await that termination which was now evidently rapidly approaching, and I continued to see the patient off and on until shortly before his death.

And now comes that part of the subject which demands your lenient criticism, and which will force you to pass your judgment upon the operation, and not upon the case quoted in its support. I left London for an Easter holiday in April, and while I was away the patient died, and I returned to find that no post-mortem had been made. I need hardly express to you the regret which both Dr. Richardson and myself felt at this untoward and unsatisfactory completion of so interesting a case. The final symptoms, however, accorded with the diagnosis of carcinoma, viz., gradual inanition and exhaustion, and not with the bursting of an aneurism. I place the case before you, regretting its incompleteness, and submitting it only as the best example I have at command of the procedure it involved. That I personally believe I

was in this instance fortunate enough to stop up the right ureteral channel with blood-clot, is of course weak and biased evidence. I have no pathological specimen to support my view. I would submit, however, that the clinical aspect of the case might allow us to conclude a plug had closed the ureter. The sudden cessation of the haematuria was also directly coincident with my interference. This is, however, not the question I would ask you to discuss. I bring the procedure before you to evoke criticism. Is it sound surgery to cut off in this way a bleeding source? To that I would answer, the procedure is based upon physiological and pathological grounds. It is one which involves no risk and but little pain. If effective it will preserve for the patient the capital of blood upon which he lives, and which he is lavishly intrenching upon. It is a procedure which, if effective, may possibly by pressure at the pelvis even *retard* the copious blood-supply to the neoplastic growth; and which, lastly, will probably permit the patient to enjoy a longer period of life than will the extremely formidable operation of nephrectomy, and that without involving him in the anxiety, pain, or danger of that measure. The possible formation of a renal blood tumour consequent upon the closure of the ureter may take place, but the record of such a blood collection increasing to a great or even to a dangerous extent comprises so few cases as to admit of a possibility, and not an invariable probability.

As regards the *possibility* of attacking the ureter by way of the bladder, that is a question which I hope this paper will settle, by getting others to imitate the attempt I have just described. I believe that Tuchmann's instrument will prove of greater service than mine. It is obviously better fitted than the one I have used for this case, and is one which I hope to employ in future cases.

Dr. TUCHMANN showed the instrument he had invented to accomplish a similar object. He was disappointed in not hearing from Mr. Fenwick an explanation of the way in which by his method the plugging of the ureter was accomplished. There was usually a good anatomical guide in the bladder, between the uretal orifices, by which we could find these openings. With a finger in the rectum, and any instrument such as that of Mr. Fenwick's, he thought it was impossible to seize or nip the ureters.

Mr. HENRY MORRIS congratulated Mr. Fenwick on at least an ingenious thought, but how far practice would follow the thought was questionable. Mr. Fenwick regretted he did not obtain a post-mortem examination, but he himself thought that even if an autopsy had been made, and the kidney with its pelvis found distended with clot, one would not even then have been in a position to say with certainty that this was the result of the operation. He did not understand from Mr. Fenwick whether the instru-

ment entered the ureter, and the blood which was sucked came from the ureter itself. He would propose ligature of the ureter rather than sucking the blood down from the renal pelvis. But if the ureter really were distended with clot, would that cause cessation of haemorrhage or cessation of the growth of a tumour? In some cases occlusion of the ureter by clot has caused enormous distension of the kidney. M. Damian in 1828 recorded a case where after injury the ureter became blocked. Two months afterwards an abdominal tumour formed, which on examination proved to be an hydronephrosis containing much blood. A case like this showed that danger might occur even if Mr. Fenwick's operation were done. In a majority of cases of malignant disease of the kidney there was no haematuria at all, and in those cases in which there was haematuria the bleeding vessel usually became plugged. Would not an explanation such as this explain Mr. Fenwick's case—a malignant growth invading the ureter, haemorrhage, and subsequent plugging of the vessel. In cases of traumatic haematuria, if ergot and witch hazel failed we should do nephrectomy. The effects of plugging the ureter were uncertain. A collection of mixed blood and urine in the loin round the kidney caused frequently suppuration and death, and was the fatal complication most to be dreaded. It was therefore much better, if drugs failed, to explore and drain the loin, and then, if necessary, do nephrectomy. Mr. Andrew Clark, at the Middlesex Hospital, recently, in a case of damaged kidney with extravasation into the loin, saved the patient's life by timely exploration.

Mr. R. W. PARKER asked whether the haemorrhage was not due to the accident rather than to the pathological condition. If, after injury, the outflow of blood was stopped, the organ might become the centre of malignant disease. He would, therefore, prefer to do an exploratory operation. He agreed with Mr. Morris that if we could plug the ureter, haemorrhage would go on into the renal pelvis.

Mr. BRUCE CLARKE thought the point established that the best method of treating injuries of the kidney was by direct lumbar incision. It was difficult, even where there was a well-developed inter-ureteric bar, to get the instrument over the uretal orifice, but he believed that compression of the lower two inches of the ureter with an instrument in the bladder and a finger in the rectum was quite possible; but unless the instrument to be used could be handled dexterously after a reasonable amount of practice, it could scarcely come into general use.

Mr. BERNARD PITTS said that in cases of haemorrhage after injury of the kidney, the danger was from peri-renal or intra-peritoneal extravasation rather than from downward vesical outpour. He had seen cases of haemorrhage into the bladder with passage of casts, and in some cases impaction of a clot in the ureter had happened, and a large hydronephrosis occurred. As far as his experience went, there was more need of an instrument to unblock the ureter and get rid of the clot. Could Mr. Fenwick do this with his suction apparatus? One case of hydronephrosis after injury got well after repeated aspiration; one died after lumbar incision; one case was aspirated, it refilled, it was aspirated a second time, and again refilled, then deep massage was tried, this was followed by unblocking of the ureter and recovery.

Mr. FENWICK, in reply, said it was true he was obliged to rely on rather circumstantial evidence. In his case there was haematuria for thirteen months; then he operated, and this was followed by a stoppage of the bleeding for six months. His object was not to bring down a clot from the renal pelvis into the ureter, but to fix that which was already there.

Though the blow might have been inflicted on an organ already carcinomatous, he thought that in his case the kidney was damaged first and the malignant disease followed later. He was afraid his method would be of little use in unblocking the ureter, for if a clot became impacted and adherent there it could not be moved by suction.

### SOME CONDITIONS OF THE BLADDER WHICH SIMULATE STONE IN CHILDREN.

By W. BRUCE CLARKE, F.R.C.S.

IT is within the experience of all those who have much practice in examining the interior of the bladder, that it is much more common to find its surface roughened in children than in adults, and it is also much commoner in children to find the symptoms of stone without its actual existence being demonstrated.

There is scarcely a work on surgery which does not at least give some passing allusion to this subject, and I will briefly mention a few of these statements. In his work on diseases of children, Mr. Holmes (p. 592) makes the following statements:—"The diseases which are marked by some of the symptoms of stone are mainly phimosis, strumous affection of the bladder, and renal irritation." "Rugous bladder is another very common condition simulating stone, but only so far as stone produces cystitis, of which rugous bladder is, I believe, a mild or chronic form." Again (p. 595): "There are some ambiguities connected with sounding for stone, which it is of great importance clearly to recognise, or the presence of stone may be affirmed when there is really no stone. I have seen the bladder opened in a child by one of the most experienced surgeons in London where no stone could be detected."

On the same subject Erichsen remarks: "Irritability of the bladder in children appears to be an affection closely allied to the congestive and sub-acute inflammatory affections of the different mucous membranes as of the eyes, nose, and throat, that commonly occur in strumous subjects. In this disease the child passes urine with great frequency and with much pain. In fact, many of the ordinary symptoms of stone are present."

Sir Benjamin Brodie\* drew attention many years ago to a somewhat analogous condition, and pointed out that it occasionally simulated stone. He says, speaking of stone: "The symptoms

\* 'Lectures on Diseases of the Urinary Organs,' 1849, 4th edition, p. 290.

will rarely mislead you, but they will sometimes. There may be a stone in the bladder without the usual symptoms, and there may be many of the usual symptoms without stone in the bladder. In children especially, the deposition of lithic acid sand by the urine will not unfrequently produce not only pain in the glans, but bloody urine, and all the other symptoms of stone in the bladder. A boy between 4 and 5 years of age was brought to me, who had a constant inclination to make water. He screamed with pain as the urine flowed ; he was perpetually squeezing the end of his penis between his fingers, as if he referred the pain to that part ; and the urine was frequently deeply tinged with blood. I scarcely entertained a doubt that there was a stone in the bladder. I examined the bladder but there was no stone. I examined it again and again, but still there was no stone. I enquired more particularly into the child's health in other respects, and the result was that I was led to prescribe an occasional dose of calomel and rhubarb and sal polychrest in the intervals, and under this simple plan of treatment all the symptoms disappeared in a few weeks."

I might multiply such statements almost indefinitely. I propose, however, to limit myself to-night to the consideration of a condition of the bladder, which differs in many of its clinical characters from those cases just alluded to, though probably in its pathology it is very nearly allied to them ; moreover, so far as I am able to ascertain, though the condition which I am about to refer to is sufficiently well recognised, by some surgeons at least, it has never been definitely described. I allude to a condition of the bladder in which it is so coated with a calculous deposit, that it feels hard, and rough and gritty, like a piece of sand-paper.

The following clinical notes of two cases that were under my own care at the West London Hospital, will give an excellent idea of the symptoms by which such a condition can be diagnosed :—

CASE 1.—J. R., 9, was admitted under my care on January 8th, 1882, at the West London Hospital. His mother gives the following history. He has been complaining for several months of pain when he passes his water, the pain is apparently somewhere round about the anus and in the penis. At times his mother has known him scream with pain whilst making his water. On cross-examination she thought the water had been at times tinged with blood. Sounded, the bladder was very rough, and quite grated in some places when the sound passed over it. The boy appears in other respects to be quite well. Urine faintly acid, 1024. No albumen or sugar.

I directed the boy should be kept in bed and watched, that he should be fed on ordinary wholesome diet, excepting only meat, and should be induced to take as much milk as possible. Ordered Ol. morrh., Vin ferri.

February 2nd. Since he came in the boy has steadily improved ; there is much less pain on micturition, and he can with difficulty be kept in bed.

Sounded, the bladder was almost normal.

February 28th. Sounded again. The bladder was smooth and natural, and there was absolutely no pain on micturition.

Discharged. Not heard of since.

CASE 2.—F. B., 8, was admitted under my care on April 26th, 1885, with the following history. His mother said he had complained of pain during the previous six weeks or perhaps a little longer when he passed his water. The pain had been worse lately. He had also suffered during the last month from incontinence of urine especially at night. The immediate cause, however, of his coming to the hospital was the fact that his urine would scarcely pass at all, and then only with the greatest pain. My colleague, Mr. Wainwright, who first saw him in the out-patients' room, passed a catheter down as far as the region of the bulb, where it was arrested, causing a great deal of pain, and he was at once sent into the wards where I saw him shortly afterwards, and on endeavouring to pass a catheter found it arrested at the place above mentioned. He was placed under an anæsthetic ; when he was thoroughly under its influence, it was discovered that his bladder which had been much distended was now empty, and had evacuated its contents into the bed. On passing a sound the obstruction was found to have disappeared, and the instrument passed easily into the bladder. The walls were extraordinarily rough, giving one the impression that they were coated all over with sand-paper ; so much was this the case, that I asked several of those who were standing by to feel the extraordinary sensation that was communicated to the sound, and every one felt it without difficulty. It appeared as though the whole of the bladder-wall was thus coated. No separate stone could be detected. Under the impression that the flow of urine which had taken place during narcotisation must have displaced an impacted calculus from the urethra, a most careful search was made in the bed for one, but in vain.

I directed that the boy should be kept warm in bed, have no meat, but an abundance of milk and vegetables, and that he should have as much lemon-drink as he pleased, and m. xv of citrate of potash three times daily.

No urine could on that day be collected for examination, but a few days later it presented the following characters. It was very scanty but clear, though it was stated sometimes to be thick, and contained mucus. After standing a little a sediment was deposited, which was much increased on heating, and was dissolved by acids. It was acid when passed, and contained no albumen or sugar. Prismatic triangular crystals were discovered with the microscope.

On several subsequent occasions I found under the microscope some few oxalate crystals, both of the dumb-bell shaped and pyramidal varieties.

May 14th, that is to say, about a month after his admission, his symptoms were slightly improved. He still suffered from the nocturnal incontinence, but the pain on the passage of urine had almost entirely vanished, though it was exhibited occasionally, and several pieces of gritty phosphatic matter, the largest of which was perhaps one-sixteenth

of an inch in diameter, had passed. The bladder was much less rough in its interior, and a larger amount of urine was being passed in the twenty-four hours.

June 16th. The same treatment has been carried on, except that the potash has been discontinued, and the boy is now practically well, except that he occasionally wets the bed at night. The interior of the bladder feels perfectly smooth and healthy.

I heard of the boy about ten months later, and he was in perfect health.

In the second case, where it was certainly clear that the majority of the deposit if not the whole of it was phosphatic in character, it may well be asked why I gave alkalis, and cut off the meat diet. My object in so doing was to put the digestive organs at rest by employing milk as the staple diet, whilst at the same time the potash would act as a diuretic and cause a larger secretion of urine. At any rate the plan of treatment proved a complete success, the boy gaining in weight, and obtaining complete control over his urinary secretion.

From subsequent experience, however, both in children and in those cases in adults in which phosphatic urine with small deposits of a similar nature within the bladder formed a prominent symptom, I am inclined to think that washing out the bladder thrice daily with an acid solution consisting of 3 grains of dilute nitric acid to the pint, would probably prove more rapidly effectual as a means of cure. Combined with such local medication, rest in bed and dietetic treatment would form useful adjuncts. Probably, however, the rest in bed and the warmth which results from such a plan of treatment takes a most important place in the cure, and from the history which I have elicited in some of the slighter cases of urinary trouble in children, I am inclined to think that catching cold, at least in some cases, plays a most important part in the origin and causation of this and similar affections.

The pathology of this affection is a little difficult to follow, for it will be seen from the above cases that the urine was in both the above-mentioned instances slightly acid. How then can the deposit in the bladder be phosphatic? For a long time I was quite unable to explain the fact, when happening to see a case somewhat similar to those above in the symptoms, when it first came to the Hospital as an out-patient, I tested the urine and found it alkaline. A day or two later and the urine was acid, and the child did not complain so much of pain. Following up this clue, I have ascertained in several slight cases of irritable bladder in children,

that the urine is often slightly alkaline when the child first presents itself as an out-patient, whilst if the child is put to bed for a few days and no treatment is adopted, the urine becomes at once acid, and the bladder irritability disappears. The two cases first alluded to in this paper were not examined until they had been at least some hours in bed; in the worst case no urine was collected for examination for several days, hence, I imagine, we have a ready explanation for the acid urine which was found in each case.

It is a well-known fact, which was first established by Bence Jones, and has received ample confirmation since, that the ingestion of food renders the urine alkaline or nearly so, whilst Duriau\* showed that prolonged exposure of the skin to cold, and especially after immersion in a cold bath, the urine remained alkaline for some time. Here, then, I would suggest is the explanation of the symptoms which we observe. Thus the sequel of events is as follows:—Exposure to cold, alkaline urine, deposit of phosphates in the bladder, which speedily disappear when the surface of the body is kept warm, and good wholesome food is ingested, by which means the urine returns to its normal condition of acidity. If this be the true solution of these cases, they are pathologically merely aggravated conditions of those ordinary irritable bladders which are not unfrequently seen in children, especially amongst those of the lower classes, who are exposed when insufficiently clad to the inclement winds of our climate. Clinically, however, they differ from these cases in simulating very narrowly by their painful nature and blood-stained urine the characters of calculus, but when a sound is introduced into the bladder the walls are felt to be gritty and rough like sand-paper, and no calculus is discoverable, and so far as I know calculus is rarely, if ever, associated with such a condition.

The only difference between these phosphatic deposits in the bladder of a child and those which are found in the bladders of adults, consists in the fact that the child's bladder is only temporarily inflamed and disordered, whilst that of the adult is unhealthy, and has perhaps for some time been irritated by a stone, which is itself incrusted, and so persistent is this tendency to incrustation, that it is occasionally seen afterwards in the lithotomy wound during the progress of its cure.

\* 'Archives Générales,' 1856, i, 167.

Mr. R. W. PARKER was sorry he did not hear definitely from Mr. Clarke what were the symptoms of stone in a child. The text-books were very misleading on this point. He had gone recently through the notes of twenty-five cases under his own observation of stone in children. He had had nine cases in girls, and the symptoms were quite different from those usually observed. Pain and haematuria were conspicuous by their absence. The chief symptoms were tenesmus and tenesmic diarrhoea. In boys it was necessary to exclude first preputial irritation, tubercular disease of bladder and irritable bladder from vicious feeding. Stones of large size were often found with symptoms of short duration and slight intensity.

Mr. SHEILD wished to quote some cases of malignant disease of pelvis which closely simulated stone. In one case, Mr. Pollock, at St. George's, sounded a boy over and over again; the boy died of pelvic sarcoma. Two other cases, one in a lad of 15, one in a child, had malignant growth. In all three the clinical signs of stone were marked. In three cases of vesical calculus in boys which he saw at Cambridge the first symptom was a stoppage of the stream.

Mr. MORRIS referring to such cases as Mr. Clarke had related of phosphatic incrustation of the bladder, said he thought the cause was due to an over-acid condition of the urine at the time of its secretion. This would explain why, in cases of bladder irritation with alkaline urine, subsidence occurred under alkaline treatment. Urine when secreted over-acid irritated the bladder and set up a temporary cystitis, which lasted till drugs made the urine less acid, when the irritation would subside. That this was the case in this class of cystitis cases was demonstrated by washing out the bladder, and testing the urine secreted during the next ten minutes or quarter of an hour. The over-acidity was probably caused by a faulty diet. The application of warmth and a regulated diet produced a normal acidity of secretion and excretion.

Mr. BRUCE CLARKE in reply, was sorry Mr. Parker did not give what he called the true symptoms of stone in boys. He had never had a girl with stone under his care. In boys it was extremely difficult to eliminate the accidental from the true symptoms of calculus. He thought the most constant symptom was vesical irritability, and a certain amount of blood was rarely if ever absent. Pulling at the penis was sometimes present, but probably in every twelve cases with this symptom one would only find one stone. He would adopt Mr. Morris's method of examining that class of cases in the future.

*March 21st, 1887.*

## CASE OF SWOLLEN OPTIC DISC, IN WHICH THE SHEATH OF THE OPTIC NERVE WAS INCISED BEHIND THE EYEBALL.

By ROBERT BRUDENELL CARTER, F.R.C.S.

I AM desirous to bring before the Society an account of an operation I have recently performed, by opening the sheath of the optic nerve behind the eyeball, in order to permit the escape of fluid in a case of great swelling of the termination of the nerve within the eye.

An operation for this purpose was first suggested by Dr. de Wecker, who, at the London meeting of the Quadrennial Ophthalmological Congress, in 1872, read a paper on the subject. He pointed out that the investigations of Schwalbe, continued by H. Schmidt, Manz, and others, had shown that the liquid contained in the arachnoidal space may in cases of exaggeration of intracranial pressure be forced through the optic foramen between the two coats of the optic nerve up to its insertion into the eye. Here the liquid, meeting an obstacle in the sclerotic ring, produces distension of the external coat on the one hand, and, on the other, strangulation of the contents of the nervous sheath (fibres and vessels), which would explain the disturbance of vision, and the secondary atrophy of the nerve itself. Dr. de Wecker did not enter into any discussion as to the applicability of Schwalbe's theory in all cases, or as to whether the dropsy of the optic nerve is constant in every case of confirmed neuro-retinitis. He maintained it to be indisputable that in the great majority of necropsies the distension of the external sheath near the eye has been met with, and that Schwalbe's theory affords the most satisfactory explanation of the production and symptoms of neuro-retinitis. According to this theory, he considered that there were two indications to be fulfilled: in the first place, to give issue to the accumulation of the cerebral liquid by making an incision into the external coat of the optic nerve; and, secondly, to relieve the strangulation of the nerve by incising the sclerotic ring where it

forms the junction of the sheath with the external enveloping membrane of the eye. By proceeding thus, he hoped to relieve the symptoms of compression, not only of the nerve itself, but those of the cerebral centres, in other words, to remove the pain and inconvenience arising from the excess of intracranial pressure.

Dr. de Wecker went on to say that he had performed the operation in two cases of cerebral affection (probably tumours of the cerebrum). In one of the cases, a man of forty (whose right eye was operated on), neuro-retinitis was completely regressive in the right eye, and in the other regressive also. There was only a slight degree of vision, scarcely allowing the patient to do any work, even if the weakness of the legs, with which he was at the same time affected, had permitted it. The other patient, a woman of thirty (whose left eye was operated on), was completely blind, and was at the same time the subject of paraplegia, partial paralysis of the left facial nerve, and great difficulty of moving the tongue. She also suffered from incessant headache. The neuro-retinitis was in this case evidently progressive in both eyes, and especially in the left.

Dr. de Wecker described his operation by saying that he made an incision between the rectus externus and the rectus inferior muscles, at a distance of 1 cm. from the margin of the cornea. Then, cutting the conjunctival and sub-conjunctival tissues, he penetrated between the eye and Tenon's capsule with a pair of probe-pointed scissors until he reached the optic nerve. He then introduced a spatula, and luxated the eye upwards and inwards. It was easy after the luxation of the eye to feel with the spatula the distended nerve, and to introduce a sheathed neurotome, an instrument made by M. Mathieu for the purpose, and which I have here for exhibition. It consists of a stem curved to fit around the eyeball, terminating in a notched extremity intended to feel for and to embrace the nerve, and concealing a sheathed blade. Dr. de Wecker believed the mechanism of this instrument to be such that by slight pressure on the spring only that part of the nerve would be cut with which the notch was placed in contact, at a distance of 1 cm. behind the eye. The operator was to incise the sheath of the optic nerve and the sclerotic ring, moving and pressing the instrument from behind forwards. He would then remove the instrument after having pushed the spring back, so that the blade could not cut more than was desired.

Dr. de Wecker stated the results of his two operations as follows:—

1. There was no pain after the operation, which was performed without the aid of anæsthetics. 2. Very great relief of the headache, especially on the side operated upon. 3. On removing the bandage twenty-four hours after the operation there was a very slight congestion of the eyeball, and the pupil deviated to the opposite side of the penetrating wound, probably in consequence of rupture of the ciliary nerves. This deviation of the pupil disappeared in a few days. 4. The operation having been performed in complete regressive forms of neuro-retinitis, no amelioration of sight was to be expected; nevertheless the male patient seemed to have improved in the operated eye, for in a week he was able to perceive the light. The beneficial result in this case seems to have been indisputable, and the medical men who assisted at the operation were of the same opinion, as there was a marked influence on the headache, and on the general state of the health. The male patient was able to stand more firmly on his legs, and to answer questions promptly. He seemed delighted with the operation, on account of the general relief he had experienced, although he had gained nothing as far as the sight was concerned. The result of the operation was less manifest in the female patient, who was only relieved of her headache.

The ophthalmoscope did not discover the incision, which was perhaps not made deeply enough; but there was a slight increase in the volume of the vessels, especially of the veins.

In September, 1872, Dr. de Wecker's experiment, if I may so describe it, was repeated by Mr. Power on the right eye of a girl of thirteen, this eye having been blind for two years, and having still some swelling of the optic disc. Mr. Power has favoured me with the notes of the case, but it is sufficient to say that, beyond a doubtful increase in the power of perceiving light, no beneficial effect was obtained.

Dr. de Wecker's paper greatly impressed me when it was read; but I could not escape from the conclusion that a case of advanced optic nerve atrophy, although possibly suitable as a *corpus vile* on which to demonstrate the practicability and harmlessness of the operation, was not one in which any good result could reasonably be expected. I felt, moreover, that the mode of procedure was extremely faulty, and that the structures concerned were far too

important to be incised without the aid of sight. The least obliquity of direction of the unsheathed blade might cause it to divide one or more of the ciliary nerves; and, even if the blade were placed with diagrammatic correctness, the smallest excess of penetration might wound the central retinal vessels in the nerve trunk. The attempt to extend the incision through the sclerotic ring seemed to be especially perilous, and likely to lead to puncture of the choroid, and to extravasation of blood within the eye in the neighbourhood of the macula lutea. In short, the operation, as described by Dr. de Wecker, appeared to me to be too uncertain and too dangerous to be justifiable in any circumstances, although I had no doubt of the soundness of the principle on which it was based.

During the last few years it has been my lot to see a large number of cases in which, in connection with the growth of intracranial tumours or with other morbid processes, there has been great swelling of the intraocular extremities of the optic nerves. In many cases of this kind sight is at first absolutely unaffected, the swelling being limited to the connective tissue of the disc and of the fibre layer of the retina, and being apparently produced by a moderate amount of mechanical impediment to the circulation, not enough either to arrest conduction through the nerve fibres or to close the channels of the vessels. In some instances the swelling of the optic discs has disappeared under treatment, and complete recovery has ensued. In others, nerve atrophy and blindness have been produced; and these consequences may, I think, be explained in two ways. If I may dwell for a moment upon the anatomy of the parts concerned, it will be to remind the reader that the optic nerve is closely invested by a sheath derived from the pia mater, and this again, but loosely, by a sheath derived from the dura mater. Between these two sheaths there is an interval, or intervaginal space, which terminates in a cul-de-sac at the level of the back of the eyeball, where the dural and pial sheaths unite to blend with the sclerotic. This intervaginal space contains membranous processes derived from the arachnoid, and communicates with the sub-arachnoid space; so that, as was shown by the authorities cited by Dr. de Wecker, an excess of sub-arachnoid fluid will make its way into the intervaginal space, compressing the nerve trunk and distending the dural sheath, which, especially in the immediate neighbourhood of the eye, has often been found to be much

dilated. The central artery and vein of the retina pierce the sheaths at a point which is from 15 to 20 mm. behind the eye ; and it is manifest that compression of the lower part of the nerve trunk, in which the vein is still contained, must impede the return of blood, and must occasion dropsical swelling of the nerve termination within the eye, and of the adjacent retina, with turgescence of the retinal branches of the vein. The effect of such compression must depend upon its degree, and experience shows that it may be sufficient to produce distinct dropsical swelling, and that this may continue (within my own knowledge for more than three years) without any affection of the sight. On the other hand, the compression of the nerve trunk as a whole may increase so rapidly and to such a degree as quickly to destroy vision by arresting conduction through the fibres, in which case it must also arrest the flow of blood through the vein, an occurrence usually attended by hæmorrhages into the retina. When the compression increases more slowly, the consequent dropsical effusion may excite inflammation of the connective tissue of the optic disc by mechanical disturbance of its structure ; and this inflammation may in its turn give rise to an interstitial plastic exudation, which will gradually contract, and will produce atrophy of the disc by strangulation of its capillary vessels and of its nerve fibres. With the commencement of contraction vision begins to suffer, and is ultimately completely extinguished.

It is very common to hear all cases of swelling of the intra-ocular termination of the optic nerve described as "optic neuritis," but I am strongly of opinion that this description is erroneous. I am only too familiar with optic neuritis, and the first symptom of its existence is great impairment of sight, which, if the inflammation be not relieved, speedily passes into blindness. The neuritis is usually retro-bulbar in its origin, and some days may elapse, and central vision may be almost lost, before any evidences of exudation can be discovered in the disc. Even then, such evidences are often so slight that only a practised eye would detect them ; and I presume that the part of the nerve primarily affected is in such cases posterior to the point at which the retinal vein emerges from the sheath, and that hence no mechanical or dropsical swelling of the disc is produced. I do not believe in the possibility of any true neuritis without marked derangement of the function of the affected nerve ; and when I see, as I have often seen, considerable

swelling of the optic nerve within the eye, continuing for weeks, months, or even years, without any injury to the sight, I feel convinced that such swelling is not neuritic, but only passive or dropsical, a result of impeded circulation. I have no doubt that dropsical swelling may excite a sort of spurious neuritis, in the way already mentioned, by the disturbance which the swelling occasions, but I regard this effect as being confined to the connective tissue, and not as constituting neuritis in any true sense; nor do I think that the mere presence of leucocytes in the optic disc affords evidence of any action to which the word "neuritis" can properly be applied. We have all seen cellulitis of the leg, and we have all seen a certain amount of inflammation, attended by erythema, as a consequence of dropsical swelling; but we should not describe a limb which presented the latter conditions as an "inflamed leg," even though it would no doubt contain leucocytes in abundance, and though the fluid in the meshes of the connective tissue were coagulable and plastic in its character. Notwithstanding all this, we should know that a few judiciously placed punctures, by allowing the fluid to escape, would speedily produce a change for the better, while in actual cellulitis not even free incisions would generally prevent destruction of tissue. To confound the two conditions, on account of the presence of microscopic products common to both, would be to permit histological refinements to outweigh the evidence of broad clinical facts.

The cases to which I am now chiefly desirous to direct attention are those in which, after the persistence of optic nerve swelling for a certain time, without impairment of vision, such impairment at last commences, and proceeds more or less quickly to complete blindness. In some of these cases the loss of sight may be due to the development of a tumour or other intercepting lesion between the optic nerves and the cerebral centres of vision; but more frequently, in my judgment, it is due to one of the two causes I have mentioned, that is, either to rapid compression of the nerve trunk as a whole by increase of fluid within the dural sheath, or to slow strangulation of its capillaries and fibres by the contraction of an interstitial effusion of a plastic character. In some of these cases the primary lesion may be recovered from, in others it may not destroy life for a long period, but in both the patient is left blind.

I may mention, by way of illustration, the history of a gentle-

man who first consulted me on the 30th September, 1885. He had then great swelling of both optic discs, but scarcely any affection of the sight. He continued much in the same state until the following April, when his sight began to fail, the previously existing swelling passed into atrophy, and in a few weeks he became totally blind. There is reason to believe that he has an intracranial tumour, but he is still in possession of his mental faculties, and, although reduced in strength, has no paralysis. In thinking over his case, I determined that I would take the next opportunity of a similar kind to open the nerve sheath behind the eye, in the hope that the evacuation of the contained fluid would preserve the nerve from atrophy and the vision from destruction. Such an opportunity was afforded by the case which forms the subject of this paper, and which I will now proceed to relate.

E. O., a lady's maid, 26 years of age, was brought to me by her mistress on the 18th November, 1886. She had been somewhat out of health for a fortnight or so, had recently been exposed to cold when driving, and had received a blow of no great severity, on the right parietal region of the head ; but there was nothing very definite in either her history or symptoms. She had suffered for ten days from a good deal of aching pain across the forehead, and also in the occipital region, but her chief complaint was that, when rising on the morning of the 9th, she discovered that she saw imperfectly with the left eye. She could distinguish objects, but said that they looked dark and dim, and this state of the sight, although varying a little from time to time, had remained substantially unaltered. Central vision of the left eye was found to be equal to about two-thirds of the normal standard, but the eye was blind as to the temporal half of its field of vision, and the field was much contracted in other directions also, as shown by a chart which was taken on the 26th of November. The left optic disc was swollen, and its margins were entirely concealed, the swelling encroaching upon the retina in an unusually broad zone of circumneural turbidity, through which not even the colour of the choroid could be seen. The central part of the swelling showed numerous small haemorrhages, and its apex was best defined with a convex lens of four dioptres, which, allowing for one dioptre of hypermetropia, pointed to an actual elevation of 1 mm. Beyond the swelling, the retinal veins were distended and tortuous. The right eye was normal in aspect and vision, and had one dioptre of hypermetropia. There were no general symptoms of a kind to throw any light upon the essential nature of the lesion. The tendon reflexes were active, and there was a trace of ankle clonus.

The patient was admitted into the National Hospital in Queen's Square, under the care of Dr. Hughlings Jackson, with whom I was associated ; and she was placed upon iodide of sodium with mercurial inunction. She very soon became mercurialised ; but the only other obvious change in her condition was that the swelling of the optic disc, and the breadth of the turbid circumneural zone, continued steadily to increase. Some opaque white patches appeared among the effusion, a considerable haemorrhage occurred over the position of the inner margin of the disc, and on

the 17th of December flocculent opacities in the vitreous were observed over the apex of the swelling.

The vision was at this time unchanged, but I felt that it was exposed to great risk from increasing pressure or from interstitial strangulation, altogether independently of any unknown lesion by which the origin of the local condition might be explained ; and I determined, with the assent of Dr. Hughlings Jackson, to repeat Dr. de Wecker's operation, if possible, in a more certain and more satisfactory way. I convinced myself, by trial upon the dead subject, that the insertion of the optic nerve could only be exposed from the outer side of the orbit, and, after much consideration, I determined upon the course about to be described.

On the 28th of December, the apex of the swelling being then best defined by a convex lens of nine dioptries, showing an elevation of close upon 3 mm., or twice the diameter of the disc itself, the patient was placed under chloroform, and the lids were widely separated by a rack speculum having its bar on the nasal side. I divided the conjunctiva and sub-conjunctival tissue in a vertical line, about a centimetre from the corneal margin, so as to expose the external rectus muscle a short distance from its insertion. I passed two strabismus hooks under the muscle, and then, being provided with two threads of fine carbolised catgut, each carrying a needle at either end, I passed the two needles of one thread through the tendon, from within outwards, between its insertion into the sclerotic and one of the hooks, and the two needles of the other thread, also from within outwards, between the belly of the muscle and the second hook, and then divided the muscle between the hooks. The eyeball was next rotated inwards, while the orbital portion of the divided external rectus was lifted and turned outwards. By a succession of small scissor snips I carefully divided the capsule of Tenon, and other resisting structures, to the necessary extent, and presently succeeded in bringing the insertion of the optic nerve into view. I had furnished myself with a fine sharp-pointed knife, and with a very delicate sharp hook, each mounted on a flexible platinum stem. I picked up and steadied the nerve sheath with the hook, and incised it with the knife, in the direction of the axis of the trunk, for perhaps a quarter of an inch, up to the insertion into the eye, but without dividing the sclerotic ring. An escape of fluid showed the division of the sheath to be complete. As soon as this was seen, the eyeball was replaced, the parts of the divided external rectus were brought together by the sutures already in position, and the conjunctival wound was united by two others. Both eyes were closed and bandaged, and the patient was put to bed.

The operation was followed by no discomfort. There was no rise of temperature, the muscle united readily, and the external wound showed no irritation. On the next day the patient was somewhat nervous and excited, but on the third day she said that she felt quite well, and that she was completely relieved of the pain and "muzzy feeling" in the head by which she had for some weeks been troubled.

A mere glimpse with the ophthalmoscope, four days after the operation, showed that the swelling of the optic disc had diminished, but no complete examination was made until the 7th of January. By that time, the broad zone of circumneurial retinal opacity had disappeared, and the margin of the disc was visible around rather more than the outer half of its circumference. The best definition of the apex of the swelling was obtained with a convex lens of four dioptries, showing that the actual prominence had diminished by about one-half, or to what it was when first examined.

From this time forward, the subsidence of the swelling, although not rapid, has been steadily progressive. The remaining blurring of the inner margin of the disc has disappeared ; and all the extravasated blood has been absorbed. The vessels of the disc are visible throughout the whole of their course, and there is no longer any impediment to the venous circulation. There is about one-third of a millimetre of remaining swelling, and the general aspect of the surface is still somewhat veiled and abnormal, but it seems to be in course of steady restoration to the natural condition. If I had divided the sclerotic ring, the recovery might possibly have been more rapid.

The acuteness of central vision has become normal, and early in March the field began to increase on the previously blind temporal side. A chart was taken on the 21st of March, in a very bad light, and the field has since undergone farther extension.

The movements of the eyeball, and those of the pupil, are perfect, and there is nothing to show that any surgical interference has taken place. The general condition has lately undergone steady improvement, and there is, I think, reason to hope that complete recovery will occur.

The issue of this case seems to me to establish that the operation devised by Dr. de Wecker, and which, as he endeavoured to perform it, I should not care to attempt, has been brought within the limits of safe and prudent surgery. The case shows that the sheath of the optic nerve can be exposed to view, that any fluid which it contains can be evacuated by incision, and that this can be accomplished without risk to the patient, or without the possibility, assuming the exercise of due care and skill, of any injury to the eye. If thus much be conceded, we have only to inquire in what circumstances, if in any, such a proceeding is likely to be advantageous to a patient.

For the purposes of such an inquiry, I should in the first place exclude all cases in which swelling of one or both optic discs is apparently due to the presence of an intracranial tumour which can be localised and removed. Mr. Horsley's operations have shown that, in such circumstances, the removal of the tumour itself is followed by the subsidence of the disc swelling ; and the results of the major operation would render the minor one unnecessary. But, apart from these cases, I think incision of the nerve sheath should be practised whenever swelling of one or both discs is attended by the commencement of impairment of vision. Such impairment might be caused, in some instances, by a lesion unconnected with the sheath, which its incision could not touch, but it would more frequently be caused by external compression or internal strangulation of the nerve, and these conditions might certainly be relieved. It is well known that many cases of swollen

disc go on to atrophy and blindness while the patient recovers, or at least does not die; and I feel strongly that, in most of these, sight might be preserved by the means to which it has been my object to direct attention.

We also see instances of loss or great impairment of sight from nerve atrophy after various acute diseases, fevers, the exanthemata, and others, and in these we generally find ophthalmoscopic evidence that the atrophy has been preceded by swelling, probably as a consequence of some meningeal effusion. If it were the custom to watch the optic discs in all grave cases of this kind, especially on the occurrence of head symptoms, the commencement and the increase of swelling would be observed, and incision of the nerve sheath would not improbably preserve the sight in many instances.

I should by no means be without hope, moreover, of obtaining good results from the operation in a certain proportion of cases of real or primary optic neuritis, those of which I have already spoken as being speedily destructive to sight, and as being attended with a very small amount of disc swelling. In these, I apprehend, the neuritis is not only retro-bulbar, but also posterior to the emergence of the retinal vein; and it is highly probable that the inflamed and swollen nerve is compressed and injured by its unyielding sheath. Assuming genuine neuritis to exist, and the nerve to be suffering compression in the manner supposed, I cannot doubt that the relief of the compression might lead to the resolution of the neuritis; and I should be quite prepared, in any such case, to undertake the operation. I should introduce, through the first aperture in the sheath, a fine probe-pointed knife between the sheath and the nerve trunk, and should run this knife as far back as possible towards the apex of the orbit, in the hope of making an incision sufficiently long to relieve compression over the whole of the inflamed portion of the nerve. In the indicated conditions, and possibly also in others, I cannot but think that the operation I have described has a fair prospect of usefulness; and I beg leave to commend it to the attention of all those who are likely to have opportunities of testing it in practice.

*Postscript.*—On Sunday, the 29th of May, the patient who had never been quite free from some feeling of discomfort about her head, of a kind too vague to admit of description, went to bed and fell asleep. She was awakened by a quantity of fluid in her

mouth, which she described as being nauseous, and of which she swallowed some before she was quite herself. When she got a light, she spat out more, and saw that it was blood-stained, but could give no account of it. What she swallowed made her sick, and the sickness was maintained until the morning by more of the fluid which trickled down her throat. She was in the country, and the medical practitioner who saw her the next morning has not replied to a letter of inquiry which I addressed to him. The escape of fluid ceased in a few hours, and she has since, to all appearance, been quite well. She called upon me towards the end of June, and I could not discover any evidence of the point from which the fluid had proceeded.

Dr. HIGHLINGS JACKSON said that this case was of interest to both physicians and surgeons. He had examined it himself. It was rare, in that the neuritis was single. He was himself unable with the ophthalmoscope to distinguish between optic neuritis and swollen discs. Loss of the left field was also rare. In the early stages of swollen disc there was no impairment of sight whatever, therefore in all cases of headache the ophthalmoscope should be used by routine. In this case mercury and iodide of potassium were pushed vigorously without effect on the disc though salivation resulted. The operation had been done with a good recovery, and Mr. Carter was to be congratulated upon bringing forward a point of such extreme interest and direct practical bearing.

Mr. JULER thought the case opened up a new era in ophthalmoscopic and medical practice, besides, the pathology of the subject was interesting. Was it a dropsy or a true neuritis? Mr. Carter had said that the presence of leucocytes was no evidence of neuritis, but when we found thousands of leucocytes and the existence of an actual membrane within the sheath, surely such cases must be classed as inflammations. In conjunction with Mr. Silcock he had examined many cases, and in some had found great increase of connective tissue and leucocytic exudation, and in these cases he was afraid this operation would not be a success.

Mr. ASTLEY BLOXAM: Was the swelling of the sheath due to the direct pressure of the arachnoid fluid? He had seen a case of tubercular meningitis in which there was great turgescence of the vessels and swelling of the disc; at the necropsy the brain was found sodden. In such a case could not we drain the cavity of the arachnoid by this operation?

Dr. HERRING asked if in a case of uræmic choked disc 7 mm. high Mr. Carter would advise incision of the sheath?

Dr. ORMEROD asked what effect had this operation on the actual cerebral condition? The headache was relieved in Mr. Carter's and all De Wecker's cases. He inquired what was the mechanism of this, and if it were probable that the same effect could be obtained in other cases. If one operated on one side only in a case of double neuritis, the case would serve as a test, for one could compare the effects of the operation on the two eyes. In old nervous cases with optic atrophy, could anything be done to save the sight whilst the lesion was progressing?

Mr. CARTER, in reply, did not believe that any true neuritis could exist without functional derangement of the affected nerve. If a free outlet

were given for drainage he thought the interstitial inflammation would subside. De Wecker's object in operating was to drain the subarachnoid space. He doubted if in his case the lesion was intracranial, he thought it was with greater probability due to a small haemorrhage between the chiasma and the eye, because of the localisation of the atrophy. If the Bright's disease were not too far advanced, and the sight were impaired, he should not refuse to operate on one eye; but one would not select by preference a patient with granular kidneys for any kind of operation. If the sight began to suffer after the swelling had existed some time, he would operate, but he would not do anything unless the patient himself were conscious of dim vision. In cases of swelling of both discs, he would operate on that eye with the greatest swelling first; at any rate until he had had more experience. The late history of cases of swollen disc with failing vision was that blindness was the rule; they could not see to carry on their occupation, and could not go about without assistance.

## RENAL CALCULUS REMOVED BY SOLVENT TREATMENT.

By C. H. RALFE, M.D. Cantab, F.R.C.P.L., Physician, London Hospital.

THE specimen exhibited before the Society to-night is, indeed, "only a little one," nevertheless, at one time it occasioned considerable pain and disturbance. Its history is as follows: early in June of 1886, John Hallett, an engineer on board one of the Scotch boats, was exposed for several hours to cold and wet. On reaching home he experienced severe pains across the loins, which his doctor told him was lumbago. These subsided with rest, and after a time he began to get about again; one day after rather more exertion than usual, he was suddenly seized with twisting pains in the left flank, radiating down towards the groin, making him sick. His medical man told him it was gravel, but the attack persisting, he applied at two hospitals, at each he received a bottle of medicine, which gave him relief, and was told that if he did not get better soon he had better have it cut out. Not liking the prospect, he came to London, and was admitted out-patient of the London Hospital, and came under my care August 16th. I told him pretty much what he had been told in Scotland, only I gave him more hope, that as the calculus had evidently not long been formed, there was considerable chance of its being passed spontaneously if the patient would persevere in the use of remedies. The patient was suffering such pain that he promised to do all I

told him, and as he was unable to work, he took lodgings near the hospital. The urine at the time had a specific gravity of 1.025, was of acid reaction, and contained a considerable amount of blood and pus, whilst any attempt at brisk walking or riding in an omnibus or cab brought on acute paroxysms of pain. He was told to drink at least three pints of *filtered rain water* a-day, to use rain water for making his tea, coffee, &c., and for cooking ; this rain water he procured through a friend in the country from a cottage water barrel. For medicine he was ordered a mixture of lithia and turpentine, and at bedtime he took 10 grains of Dover's powder. After a fortnight's treatment the urine was examined ; the specific gravity was about 1.014, reaction slightly acid, no trace of blood, and only slight deposit of pus on standing. He was also so free from pain that the Dover's powder was discontinued. He continued the use of the mixture and the distilled water, however, for some time longer, till October 7th, when after a severe struggle he passed the calculus now shown, weighing when freshly passed  $3\frac{1}{2}$  grains, oat-shaped with a length of about  $\frac{1}{3}$ rd of an inch, very rough on the exterior, composed almost entirely of oxalate of lime, with a few crystals of uric acid.

In offering a few observations on this case, I may observe that from the time when solvents were first employed for the relief of calculous disorders, it was pointed out that the method was not so applicable to renal as to vesical calculi. The reason, of course, being that in the bladder the calculus can be kept constantly covered in alkaliised or acidified urine as the case may be, whereas in the pelvis of the kidney the urine is constantly flowing off by the ureter, and produces but little impression on the stone, certainly not enough sufficient to reduce a large stone to a size small enough to pass down a ureter. This is a point on which Sir William Roberts's plan of solvent treatment has failed, it does little to materially reduce the size of the stone, whilst if the observations of Parker, Beneke, and Bence Jones are right, that the administration of alkaline carbonates increases the tendency to acid formation within the body, then the enormous quantity of citrate of potash (converted into a carbonate in the body) administered under Sir William Roberts's system, must subsequently increase the tendency to recur, to say nothing of the possible ill effects of the action of the potash salts.

On first studying the subject, I was struck with this aspect of

the question, and at once abandoned the attempt to make a considerable impression on the size of the stone by means of solvents, though I might hope after the prolonged use of distilled water and reducing the specific gravity of the urine to produce disintegration of the calculus, so that it might crumble away, leaving only a small shell which might be passed, as in the specimen I showed at the Pathological Society, 1882 ('Path. Soc. Trans.', vol. xxxiii). But what struck me most was the apparent resistance to the passage of a renal calculus by the swollen and inflamed mucous lining of the pelvis of the kidney obstructing the orifice of the ureters. I have here a minute calculus passed by a gentleman, sent me by Mr. Tweedy; small as it is it caused quite as much pain as the larger and rougher calculus I have already shown you. The reason was that the patient was exceedingly gouty, and at the time of the separation of the little pisiform calculi was suffering from a severe attack of gouty pyelitis, the little calculus thus was blocked out from its passage down the ureter, and was retained on the surface of the inflamed mucous membrane, where like a grain of sand on the inflamed conjunctiva it, for a time, caused exquisite agony; my patient who had passed many larger, very appropriately termed it the demon! Sufficient attention has not, I think, been paid to the obstruction that the swollen mucous membrane either of the pelvis of the kidney or of the larger gall-ducts presents to the passage of a stone otherwise small enough to be propelled through them. Certainly since my attention has been drawn to this point, I have felt more confidence in attempting the removal of both renal and biliary concretions, if called to see them shortly after the first symptoms of colic have appeared.

My object, then, is not to act chemically on the stone, but to check its growth, by rendering the urine neutral, and lowering its specific gravity, this is done by means of distilled water. The pyelitis may be treated by means of turpentine in emulsion with benzoate of lithia or potash, and Dover's powder given if there is much pain. I do not advise the urine being rendered alkaline, since I have found alkaline urine causing deposition of phosphate of lime, and causing considerable irritation to the mucous surface and increasing the pyelitis. As soon as the urine clears and the specific gravity falls, we must be prepared for the final expulsive action, and I would mention here the very considerable aid, as well as

relief to the patient, afforded by warm enemata. They empty the bowels of wind and fæces, which by their pressure retard the downward passage of the concretion, and they also seem to stimulate the propulsive efforts of the urinary passages themselves.

Finally this method of treatment should be employed under the following circumstances :—

1. When we have reason to suppose that the concretion has been recently formed, and is still small, and is retained chiefly by the swollen condition of the mucous membrane of the pelvis of the kidney obstructing the ureter. It is, therefore, especially indicated when the colic is attended with much hæmorrhage and pus in the urine.

2. It should be employed in those cases of recurrent pisiform calculi, so common with elderly people, in whom small concretions are passed, often with intervals of only a few months between, in sizes varying from a hemp-seed to that of a small pea (like those shown). After taking the remedies for some time, the size of the concretions diminishes, and in some instances their formation has been stopped altogether.

3. It might be advantageously administered in cases in which from the obesity, or from the broken health of the patient, nephrolithomy is rendered difficult, or is not considered advisable. In these cases, we may hope that the long-continued action of the distilled water may lead to the disintegration of the calculus; whilst the terebenthine preparations, combined with alkaline bases or acids, as the case requires, undoubtedly diminishes the existing pyelitis, and renders the attacks of colic less severe and less frequent.

### CASE OF INTUSSUSCEPTION.

By Dr. ALLCHIN.

THE case from which the specimen here presented was removed cannot be said to offer any point of exceptional interest; the extent of the intussusception alone renders it worthy of exhibition. It is that of a male child, aged 6 months, recently admitted under my care into the Westminster Hospital. He had been previously to the fatal illness healthy, though partly hand-fed with bread and milk. For five days previous to admission there had been no

action of the bowels, though small quantities of blood and slime had been passed, and there had been constant vomiting during the same period. Various aperients had been given. From admission until death, which occurred four days afterwards, making nine days the duration of the illness, the child appeared to be in considerable pain; small quantities of blood and slime were passed, but no faecal matter; the vomiting was only occasional; and the child took the breast regularly, and certainly did not appear to be so ill as is often the case. The abdomen was moderately distended, but no tumour was to be felt at any time, nor any obstruction on rectal examination. Injections of tepid water were tried without success, and the length of time previous to admission, and absence of abdominal tumour, did not justify resorting to abdominal section. The child somewhat suddenly sank, and died, but without convulsions.

*Post mortem.*—The organs, except the intestines, were found to be normal, and there was no peritonitis.

On moving aside the intestines, a tumour of about the size and shape of a Cambridge sausage was found lying in front of the spine, and extending into the pelvis quite in the middle line. This was found to consist of the invaginated colon, together with a considerable length of the small intestine and connected mesenteries, as well as the omentum. The upper extremity of the jejunum was drawn close to the upper end of the tumour, its mesentery apparently being involved. The length of intestine from the pylorus to the commencement of the invaginated portion was 100 inches, having a length of about 20 inches of the ileum invaginated, together with the cæcum, ascending and transverse, and part of descending colon.

On opening the tumour, the intussusception is seen to be of the normal ileo-cæcal form, the thickened and everted lips of the cæcal valve forming the lowest point; when quite fresh this was not more than 1 inch within the anus, but it was not perceptible to touch at the last examination the day before death. In the specimen as seen now the structures have become relaxed and swollen by the spirit and water, but when fresh the entire length of the tumour, which represented externally the sigmoid flexure and rectum, was not more than 4 inches in length, and was marked by the annular folds usually seen in very tight invaginations; these have now all become relaxed.

The vermiform appendix is seen as the section is made, and what somewhat adds to the complexity of the specimen at first sight is that a second duplication of the colon within the enveloping rectum, forming in fact a double intussusception, secondary no doubt in point of time to the formation of the ileo-cæcal one. In the upper part of the tumour, therefore, there are five layers of intestine, a condition not very uncommon. The involvement of the mesentery in the tumour is well seen.

The portion of invaginated ileum was deeply congested, and there were a few specks of lymph, but much less evidence of peritonitis in the tumour itself than might have been expected, considering the duration of the obstruction.

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*March 28th, 1887.*

## RANDOM SYMPTOMS FROM CEREBRAL SYPHILIS.

By Dr. HUGHLINGS JACKSON, F.R.S.

A PATIENT was shown who had a random association of nervous symptoms from syphilis. A man aged 34. Primary syphilis five years ago, followed by sore-throat; palate perforated three years ago. Fit of some sort five years ago. Present condition: no sense of smell; taste good; hemianopia; left fields blind [chart by Dr. James Anderson exhibited]; optic discs normal; slight distortion of the face to the left, with twitching in region of right zygomatici, and narrowing of the right palpebral aperture (relics of old Bell's facial paralysis?); paralysis and wasting of the right half of the tongue, with turning of its tip to the right on protraction, and to the left when on the floor of the mouth; deafness of the left ear. The palate was fixed to the back of the throat, the communication of the mouth with the nose being by a hole. The random association of nervous symptoms would, Dr. Hughlings Jackson said, were there no direct and obvious evidence of syphilis, point to intracranial syphilis. With paralysis and wasting of one half of the tongue there was nearly always paralysis of the palate

and vocal cord on the same side. In this case, for physical reasons, palatal paralysis was not demonstrable. Dr. Semon at the meeting examined the larynx and found no paralysis.

## CASE OF FACIAL MONOPLEGIA OF CORTICAL OR SUBCORTICAL ORIGIN.

By Dr. HUGHLINGS JACKSON, F.R.S.

A PATIENT was shown recovering from facial monoplegia of cortical or subcortical origin. A man, aged 26, who denied venereal disease, who had neither cardiac nor renal disease, had an attack of numbness of the right arm and leg for about five minutes one week before the attack on February 8th, in which, with right hemiplegia, he was aphasic. One peculiarity of the case was the rapid disappearance of the paralysis of the limbs (two hours), and of the aphasia (about two days); the patient first regained "yes" and "no." When admitted (February 11th) he had right facial paralysis and paralysis of the right side of the palate. He did not feel very light touches on the right hand, but did the prick of a pin. There was no paralysis of the vocal cord (Dr. Semon). The patient's speech (except that he was occasionally at a loss for a word), reading, and writing were good; his articulation was considerably defective. He had lost smell on the left side one month. The facial paralysis was more marked than Dr. Hughlings Jackson had ever before seen it from any destructive cerebral lesion. He exhibited photographs of the face taken by Mr. Stedman, showing, among other things, the great difference in the facial attitude between a "constructed" smile and a real smile when amused (a very important thing pointed out by Dr. Gowers). Dr. Hughlings Jackson had not seen such palatal paralysis as existed in this patient in any other case of cerebral facial paralysis, nor indeed in any sort of facial paralysis; it was as marked as the one-sided palatal paralysis occurring in (its usual association) cases of paralysis of the tongue and vocal cord. The uninstructed might have mistaken the case for one of Bell's facial paralysis with paralysis of the palate, a combination of symptoms he (Dr. Jackson) had not yet met with. The electrical reactions were normal. Dr. Hughlings Jackson did not hold the current doctrine of abrupt localisation, and considered that the transitory

paralysis of the right limbs in this case showed that the part of the brain damaged represented movements of those limbs, although to a trivial extent. No doubt, too, the vocal cords are represented in the region diseased, but their escape is (Horsley and Semon) accounted for by their being also fully represented in the other half of the brain. That the vocal cords might act well when (Horsley and Semon) one of the two phonation centres was destroyed showed that there might be loss of (one half of) the movements of a region without disability in the muscles of that region.

Dr. FELIX SEMON asked for an explanation of the association of paralysis of tongue, palate, and larynx in some cases and absence of this association in others. Is it that in one case the lesion is high up and in another low down?

Dr. HUGHINGS JACKSON said he was convinced that the tongue was supplied by fibres from the spinal accessory nerve, the nucleus of which was just behind the mouth. In the 'London Hospital Reports' for 1864 would be found an exact description of their position by Dr. Lockhart Clark.

Dr. ANGEL MONEY said that atrophy of muscles indicated lesion of the nucleus or of the nerve-trunk near the nucleus, but in some cases where the lesion was high up the wasting was not so rapid as in cases of lesion lower down, but the atrophy was considerable and accompanied by galvanic hyperactivity.

Dr. LENNOX BROWN thought there was paralysis of the vocal cord, but no atrophy.

Dr. HUGHINGS JACKSON found paralysis of palate of same side. Dr. Semon found no paralysis of the vocal cord. The fibres of the internal capsule had been cut off, and the phonation centre of one side had been destroyed.

Dr. FELIX SEMON referred to the observation of Dr. Ferrier and by Krause of Berlin on the phonation centre. It was situated in man in the lower part of the ascending frontal convolution. He himself, in conjunction with Mr. Victor Horsley, had given a demonstration recently on this subject at the Neurological Society. If the phonation centre were trephined over and removed one still had bilateral movements of the vocal cords. The speech centre was in the same place, but only on the left side; whereas the phonation centre existed on both sides. Paralysis of one vocal cord could never be produced by an unilateral cortical lesion.

## CASE OF HEREDITARY TREMORS IN A MAN OF THIRTY.

By Dr. SAMUEL WEST.

FRANCIS F., aged 30, came under observation for dyspepsia, when the tremors were noted.

He stated that he recollects having these tremors at the age of

8, when he was the "worst writer in the school." They have continued ever since, but became worse in Africa after the ague eight years ago.

At the present time the tremors affect the arms, legs, and hands. They are of slight extent, only shakings, exactly like those of delirium tremens, for which they have been mistaken. He has had to account for them in court, when brought once before Sir J. Ingram as a witness. He has drunk freely, and drinks freely now, but he has never had delirium tremens.

The tongue is steady, and there is no nystagmus. The knee-jerk is normal.

He has two brothers and two sisters, all nervous, and three are shaky like himself, but not so bad.

His father was shaky, too, and died at 58 of paralysis. His mother is nervous in disposition, but does not shake.

He has had one child, but it died soon after birth.

He recollects none of his grand-parents.

The case resembles much one shown at the Society last year by Dr. West.

## CASE OF VIOLENT POST-HEMIPLEGIC HEMICHOREA.

By Dr. SAMUEL WEST.

ARTHUR C., age 37, a soldier, was knocked down by sunstroke in Bermuda in 1875. He remembers being deluged with cold water at the time, but nothing after that until he found himself in Netley Hospital three months after. The right arm and leg were then paralysed, and speech lost.

In 1876 the right foot contracted, and was operated on, probably the tendons were divided.

He remained in Netley for two years, and after leaving in 1878 his speech began to return, and in the course of time became fairly good; but the arm and leg continued paralysed. The leg gradually got shorter. In January, 1887, he was frightened by a dog. Two days later his face on the right side began to twitch, and then the arm and leg. They gradually became as violent as they are now, and have continued as violent ever since.

The movements are chorea-like in violence, and athetosis-like in character.

The spasms begin in the face and hand, then appear in the foot, then in the arm and leg. They last only a few seconds.

The intervals between the attacks are quite irregular, but excitement or observation make them more violent.

The right leg is 2 inches shorter. The shortening affects both the femur and tibia. He is obliged to walk with a crutch, and although the movements are sometimes so violent that they threaten to throw him down, he never falls, but can, in spite of the movements, make his way without uncertainty about.

The right eye has been defective in vision since 1878, but there is no apparent ophthalmoscopic change. The right ear is deficient in power.

The sensation normal.

Dr. HUGHLINGS JACKSON thought the case more like athetosis than chorea. This case was not caused by fright. He had seen another case with similar movements, but affecting the arm higher up. Hammond of New York had proposed stretching of the median nerve for this condition.

Dr. HERRING compared the movement to a series of struggles.

Dr. EWART had seen a case in a girl who was unable to stand on account of the violence of the movements. He ordered confinement to bed and steadyng the limb on a splint ; but this treatment proved futile.

Mr. HILL said that sunstroke in Trinidad was very rare. He asked if the case was not syphilitic.

## ULCERATION OF PALATE AND PHARYNX.

By Dr. DE HAVILLAND HALL.

AT first sight some apology on my part might seem to be necessary for bringing before your notice two apparently simple cases, and yet I think that I shall be able to prove to your satisfaction that a somewhat important point is involved in both cases. But first let me give a brief record of the cases.

CASE I.—J. C., aged 19, a footman, applied in November at the Throat Department under my charge at the Westminster Hospital, and stated that he had caught cold in September, that his throat had ulcerated, and that it had become so painful that he could not swallow. On examination it was found that the right half of the soft palate was swollen, and that there existed a perforation in it with a sloughing margin. The appearance to my mind was that of a tertiary syphilitic ulceration of the palate

such as results from the sloughing of a gummatous growth. He was admitted as an in-patient under Mr. Macnamara's care on November 19th, and ordered iodide of potassium in three-grain doses twice daily; after three days the dose was increased to fifteen grains three times a-day; this treatment was continued for five days, and he greatly improved. The surface was then painted with carbolic acid lotion, twenty grains to the ounce; and he was ordered iron and quinine. A most careful examination failed to elicit any evidence of inherited or acquired syphilis.

On February 16th he again presented himself in my out-patient department, and stated that he was feeling quite well. The perforation remained, but the surface had quite healed.

CASE II.—G. W., aged 23, a porter, was sent to me to the Throat Department by Dr. Sturges. He informed me that he had had a sore throat since October, and that he had been under treatment at another hospital without receiving any benefit. With the exception of an attack of rheumatic fever three years ago, with which he was laid up for six months, and occasional rheumatic pains since, his previous health had been good. He had never suffered from sore throat previous to the present attack, nor had he had any skin affection. Though he had been in the way of contracting a venereal disorder, he had never had a discharge from or sore on the penis. There was no evidence of inherited or acquired syphilis (other than the condition of the throat) to be seen on the most careful examination.

The patient stated that five brothers and sisters had died when a few weeks old.

In this case the posterior wall of the pharynx was found to be occupied by ulceration of a superficial nature, the surface being covered by an adherent layer of a muco-purulent nature. The border of the soft palate was also ulcerated.

He was ordered five grains of iodide of potassium three times a-day, black-wash as a gargle, and effervescent lozenges containing cocaine, borax, and chlorate of potassium to relieve the dysphagia. On the 9th the dose of the iodide was increased to ten grains. On the 16th it was noted that he was certainly better, the fold of the palate was nearly healed. There was still dysphagia. Dose of iodide increased to fifteen grains.

March 2nd. Has had no pains for the last three days. Can swallow without difficulty. Only a small patch of ulceration left.

16th. Quite healed.

And now as to the point of these cases. That they were of syphilitic origin I myself have no sort of doubt. If you exclude syphilis as the cause, the only other condition which produces anything like a similar appearance is scrofula, but I am convinced that many an ulceration which has been called strumous is really a late manifestation of hereditary syphilis. Case I was shown by Mr. Macnamara at one of the examinations for the Fellowship of the Royal College of Surgeons, and gave rise to a good deal of difference of opinion. Case II is a good example of the kind of ulceration to which I directed attention in vol. i of the 'Westminster Hospital Reports,' viz., "the formation of excavated

circular ulcers in the posterior wall of the pharynx due to the formation of a gumma and subsequent sloughing of the same." In this case the effect of specific treatment was most marked. Within a fortnight great improvement took place, and complete cure within five weeks. I cannot see any greater difficulty in regarding these cases as late manifestations of hereditary syphilis than I had in attributing to the syphilis contracted forty years previously an ulcer seen in the pharynx of a medical man, whose case I recorded in the 'Westminster Hospital Reports.' This gentleman told me that he contracted syphilis at the age of 15, that he had had no secondary or tertiary manifestations till the throat became affected when he was over 55 years of age, *i.e.*, forty years after the primary sore.

I need hardly descant on the importance of recognising the syphilitic nature of these cases from a therapeutic point of view. When once their true nature is apprehended and specific treatment instituted they are very readily cured.

To recognise that they are of an hereditary nature is to relieve the patient of an aspersion which, under certain circumstances, might have caused the innocent victim much mental suffering.

## LYMPHO-SARCOMA OF TONSIL, PHARYNX, AND LARYNX.

By LENNOX BROWNE, F.R.C.S. Edin.

THIS patient, who was under treatment at the Central London Throat and Ear Hospital, by Dr. Dundas Grant, was a farm labourer, aged 28, living near Cambridge. He applied the latter end of February, as an out-patient, complaining of soreness and discomfort in the throat, which had commenced in the previous August, and had slowly increased ever since. This he attributed to the irritation caused by "ears of barley getting into his throat during harvesting," he having particularly noticed the annoyance at the time, and endeavoured to overcome it.

He had suffered occasional pain in the last three weeks only, and that not excessive. The painful spot was at the seat of an enlarged gland at the left angle of the jaw. Deglutition, although uncomfortable, was not materially affected. The phonetic character

of his voice was good, but his articulation was impaired. He had no dyspnoea. His weight was 9 stone 12 lbs. on the day of operation. On examination it was seen that the left tonsil was enormously enlarged, and protruded far across to the right of the middle line. It was divided into two distinct lobes by a deep sulcus, the anterior one being flap-like and less solid. On passing the finger down the throat, the growth was found to be attached to the epiglottis, and to extend downwards between the palato- and glosso-pharyngei muscles as far as the hyoid fossa. A laryngoscopic view was not possible.

After consultation, Dr. Grant, on March 14, removed the growth in the following manner:—Solid cocaine being freely rubbed into the surface, he first applied a wire écraseur; but on account of the firm attachment of the inferior border of the growth, the loop constantly lost its grip, and only small fragments were caught. A large portion of the remainder was removed with Schutz's new forceps and Löwenberg's curette, both being instruments usually employed for post-nasal adenoid growths; and, finally, the raspatory and finger nail, till the whole surface was smooth. Cocaine was again applied, and the galvano-cautery freely used. There was but little haemorrhage.

New growth was observed in a week, and in fourteen days had recurred. The larynx was invaded actually to the extent of the epiglottis; but it did not appear that the left pharyngo-laryngeal wall was involved, although its outline was obscured by the growth projecting across its boundaries. Glandular infiltration was limited to a small and moderately hard swelling of one of the thyro-hyoid group of glands on the left side.

The nature of the growth was ascertained by microscopical examination of fragments before attempts at more complete removal.

May 31, 1887. As stated at the meeting, the more radical operation was contemplated, and this was performed by Dr. Grant on May 1st. The procedure consisted of a preliminary tracheotomy, and the introduction of Hahn's tampon canula, followed by complete removal of all the growth and enlarged glands from within. This was effected by means of the galvano-cautery loop, raspatory, and cold snare. The case did exceedingly well, the tracheotomy tube having been removed on May 19th, and the patient leaving the hospital with perfect ease in swallowing, and with no present

sign of recurrence. The amount of growth removed was  $13\frac{1}{2}$  drachms.

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*April 4th, 1887.*

CASE OF ULCERATIVE (INFECTING) ENDOCARDITIS,  
SIMULATING ENTERIC FEVER AND ALSO ACUTE  
TUBERCULOSIS.

By Sir DYCE DUCKWORTH, M.D., F.R.C.P.

R. T., aged 17, domestic servant, a rather florid, reddish-haired girl, was admitted into Elizabeth Ward under my care on February 23rd, 1887. Her history was not readily obtained. She appeared to have caught a bad cold on the 8th of February, and had been laid up since. There had been "biliaryness," giddiness, and chilliness, but no definite rigor. There was also history of pains in the wrists, ankles, and knees, with alleged swelling in the wrists only. No illness in the house she came from. She had not had rheumatic fever, and there was no family history of it. Her mother was seen, and was a healthy woman. Her father had died of "low fever."

On admission she was found to be of small and delicate build; pupils large. The tongue was large, very red, and had two chalky streaks on either side of the middle line. No sore throat. Temperature  $101\cdot6^{\circ}$ ; pulse 112, somewhat irregular, of fair volume and low tension. The lungs were natural. The heart's apex was in fourth space, just within the left nipple. Impulse full, diffused, and slight thrill felt with it. The first sound was loud, rough, and murmurish at the apex, heard loudly but clear elsewhere. The second sound slightly doubled at the base and down the sternum. The abdomen was neither full nor concave. No spots. Liver and spleen not felt. Some gurgling was noticed subsequently on several occasions on pressing the right iliac region. Much thirst. Bowels not open for two days before admission. No swelling of any joints. Optic discs natural. The urine was faintly acid, 1015, void of albumen and glucose.

On March 1st the house physician observed a systolic murmur all over the praecordia, in the axilla, and at angle of left scapula.

The patient lay calmly on her back, looked very ill, and had the aspect of a person suffering from enteric fever. The spleen was felt for daily, but never found. There was, however, some increase of splenic dulness upwards. The bowels remained unopened for some days, and then spontaneously acted, a pasty, pale motion being passed. The only medicine given was salicylate of sodium for a few days, then dilute hydrochloric acid. The diet was without any solids, and as for enteric fever. The temperature reached  $104.2^{\circ}$  on the 25th February, and ranged from  $100^{\circ}$  to  $103.8^{\circ}$ , never reaching normal limits at any time during the illness. There were no sudden rises, save on the 25th instant.

March 7th. Subsultus present. No diarrhoea. Frequently sick, especially after beef tea. Urine natural.

March 9th. The tongue continued very red, and generally covered with the white streaks already described. Much vomiting. Hacking cough increased by movement. Heart murmur as before.

March 10th. Passed a powdery stool with fragments of bright green matter, exactly as seen sometimes in enteric fever.

March 11th. Powdery motion passed, without green particles. Vomit bilious, and with a little blood. Cough worse. Râles over both lungs, chiefly in the right. Pulse 156. Respirations becoming very rapid, 60. No cerebral symptoms. Wasting and losing power. Face became pallid. Supporting food and stimulants were freely used, and quinine was given.

At this time I gave up the idea of enteric fever, and believed I had to deal with a case of acute tuberculosis. I discussed the possibility of ulcerative endocarditis, but, finding no evidence of any infarctions, and having regard to the character of the temperature, indicating an irregular remittent pyrexia, the signs in the lungs, the rapid breathing, and the short history of the case, I was disposed to regard the disease as tuberculosis. On March 13th she died. At the autopsy, next day, the following state of matters was disclosed :—

Body very pale, fairly nourished. Lungs : dense œdema of lower lobes ; no infarcts ; no tubercles. Heart : some fluid in pericardium ; mitral valve disorganised ; many large soft growths on both aspects of it, and on the chordæ tendinæ ; orifice much obstructed ; all the other valves unaffected. Liver very fatty and anaemic. Ducts free. Spleen enlarged. A large pale infarct, softened, on

diaphragmatic surface. Kidneys contained infarcts in several stages, in one spot, none of them reduced to scar-tissue. Intestines: no ulceration. Joints: none swollen. No tubercles found in any organs. Brain not examined.

*Commentary.*—The difficulties in diagnosis in a case of this kind are certainly great, and they have been frequently experienced. It is not usually difficult to diagnosticate cases of ulcerative or so-called malignant cases of endocarditis, and they are by no means rarely met with. In this instance, the rheumatic symptoms at the outset were set to explain the mitral valvulitis which was present on admission. There was no breach of surface, or ulceration, or localised-suppuration discovered.

I think sufficient attention was not paid to the fact that the signs of mischief in this valve became unduly marked. In other words, the increasing loudness of the mitral murmur did not sufficiently arrest our notice. It should be borne in mind that cases of ulcerative endocarditis are sometimes unattended by any murmur. Many cases of enteric fever come under observation in which there are no eruptions, no diarrhoea, in fact, constipation, and no readily-formed splenic enlargement. The stools, too, are not always characteristic.

The presence of bright green particles, which occurred in this case, has been sometimes noted in enteric fever, and I have described this occurrence in vol. xxi of the 'St. Barth. Hosp. Reports.' It is found especially in cases which present ulceration beyond the ileo-cæcal valve, and it may occur in other than cases of enteric fever. The absence of the usual signs of infarction was certainly misleading. Especially was this so in respect of the spleen which was found to have a large infarct in it. There was noted during life an extension upwards of splenic dulness, but the organ was never felt, though constantly sought for. The explanation of this was, that the infarct had occurred in the upper portion of the organ just under the diaphragm. Hence the dulness found during life, and the absence of any downward enlargement.

The infarcts in the kidneys gave no sign of their presence. Of course an enlarged spleen would have tended to confirm the diagnosis of enteric fever, but a sudden and painful enlargement, together with some haematuria or albuminuria, would, if present, have gone in confirmation of ulcerative, or vegetating, endocarditis. The onset latterly of lung symptoms, abundant moist râles, and

very rapid breathing, gave the case, along with its other features, such, for example, as the type of pyrexia, the aspect of one of acute miliary tuberculosis. But, it must be remembered that very similar lung symptoms may supervene in cases of enteric fever, and the mere physical signs are by themselves inefficient to certify the diagnosis of acute tuberculosis. Again, splenic enlargement has been observed in cases of miliary tuberculosis. Microscopical examination of the vegetations on the mitral valve and of the infarct in the kidney gave evidence of the presence of numerous colonies of micrococci, such as have been frequently found in these cases. I show specimens of three which have been prepared for me in our Pathological Laboratory by Mr. Wynne, my research Clinical Clerk. These bodies long maintain their form. Some years ago, Professor Heiberg, of Christiania, showed me micrococci from damaged cardiac valves, which had been put up in spirit many years previously, long before ulcerative endocarditis was accorded a niche of its own in modern pathology. In this case the small arteries in the kidney are seen to be plugged with micrococci, and many of the glomeruli are thus affected.

We may, perhaps, ask the question whether it be, indeed, remarkable that there should be so many points of resemblance between diseases so apparently dissimilar as infecting endocarditis, enteric fever, and acute tuberculosis. We may surely associate the presence of fever in all the three conditions with the presence of micro-organisms as a common factor. It is not yet determined how these set up disease. They probably do not all act alike. They are supposed to engender some chemical poison which acts locally at first, and is then absorbed into the system, setting up pyrexia. In the case of infective endocarditis, the problem is, at least, simplified for us, as we have positive evidence of embolic dissemination. Byrom Bramwell does not regard ulcerative endocarditis as a specific infectious disease in the same sense that enteric, scarlet fever, and variola are, because he is not aware that inoculation experiments have succeeded in reproducing the disease. But Coates is dogmatic as to this, and remarks that inoculations with fragments of the vegetations have set up intense inflammations with reproduction of the organisms, and this is what happens in the case of auto-infection in cases such as that now under consideration. Cases of the disease are met with when the primary source of mischief is not in the cardiac valves, but in some distant

unhealthy ulcer or wound; the valvulitis having, however, become infective, the general features of the malady are the same as in cases of primary ulcerative or infecting endocarditis. Believing it to be a good thing to confess our failures in diagnosis, to express publicly our difficulties, and to record cases that have exercised us gravely at the bed-side, I have ventured to lay the details of the present case before you.

Dr. SANSOM inquired whether the pneumonia was recent or did it precede the endocarditis. Many cases had been recorded with this association of pneumonia and endocarditis. M. Coruil's assistant had collected a number of cases. Two sessions ago he showed a case at this Society which was preceded and accompanied by pneumonia. It was a very obscure case, but one point in diagnosis on which he relied was the gradual development of murmurs both mitral and aortic. The fact that the murmurs varied was important from a diagnostic point of view. He gave his patient half drachm doses of sulpho-carbonate of sodium for many weeks; when he commenced this treatment she at once began to mend, and she gained fourteen pounds in four weeks. When discharged she had only a slight diastolic murmur. Seven months afterwards she came back with a return of the old symptoms, and died. There were found small papillomatous growths on the aortic valve, and at one point a distinct loss of tissue, as if the process had been checked. He showed photographs of the mitral, aortic, and tricuspid valves, and was glad to be able to narrate the sequel of the case. In Sir Dyce Duckworth's case it must have been very difficult to have made a diagnosis; it might have been typhoid or tubercle. The temperature could not be taken as a guide; in one case it did not rise above 101° F.

Dr. HUGHLINGS JACKSON observed that the diagnosis between typhoid and tuberculosis was often very difficult. Even so acute an observer as Dr. Murchison had frequently been at a loss in such cases. He complimented Sir Dyce Duckworth for bringing forward this case as a clinical moral. This form of endocarditis was sometimes epidemic. A difficulty in diagnosis often arose between typhoid and meningitis, but in the latter there were no knee-jerks, even at an early stage. He had seen three cases in which attention to this point had been of value.

Dr. H. WHITE said that the disease commenced in this instance in a patient not so broken down and debilitated as was generally seen. There were no petechiæ or emboli in the skin which contributed to the diagnostic difficulty.

Sir DYCE DUCKWORTH, in reply, said the question of pneumonia never arose, for there were no lung symptoms at all till the end of the case, and then only a general small-tubed bronchitis. He had seen antiseptic treatment tried in several cases without benefit, he had given salicylate of soda for weeks without avail. In endocarditis there were various types of temperature; the remittent, as in the present case; the pyæmic, with irregular exacerbations; and the aguish with regular variations. There was generally diminution or absence of knee-jerk in the third week of typhoid, but the condition of the reflexes earlier might be of value in diagnosis. In his case it was the accumulation of negatives that made the diagnosis so difficult.

## ON THE ALLEGED DANGERS OF STARCH-CONTAINING FOODS DURING THE PERIOD OF INFANCY.

By R. W. PARKER, F.R.C.S.

I DO not think I am wrong in asserting that the belief in the dangers of starch foods during infancy is widespread, and generally accepted in our profession. It appears to me that it may be advantageous to inquire into the grounds on which this belief rests; whether these grounds are sufficient and trustworthy, or whether, in fact, this belief rests on mere "authority," independently of personal conviction founded on appropriate reasoning and experience.

Sir George Cornewall Lewis, in his admirable essay on 'The Influence of Authority in Matters of Opinion,' defines the "principle of authority" as the principle of adopting the belief of others, on a matter of opinion, without reference to the particular grounds on which that belief may rest. The belief in the dangers of starch feeding is widespread, I allow; but the mere prevalence of an opinion does not always prove its soundness;

"Non gravissimum est testimonium multitudinis . . . ."—*Cicero.*

Does the general acceptance of this starch dogma by the profession rest on "personal conviction founded upon appropriate reasoning and experience," or has it obtained currency as an abuse of the "principle of authority," as above defined?

In order to get a decided expression of opinion on this point from the Fellows present, I will state somewhat dogmatically the opinion I have come to adopt after many years' work in a children's hospital; it is this: viz., that the dangers of starch-containing foods are very greatly exaggerated. I may even go further, and say that I have never myself met with cases, in which I could distinctly and directly trace disorder to starch foods alone.

Let me, however, lead up to the position I now hold; for my object in saying that starch food is not so injurious, *per se*, as is usually represented, is not to advocate artificial feeding in preference to nursing, but to draw greater attention to what I consider, far more than starch foods, as the real and proximate causes of the marasmus and of the mortality among young children,

especially among the children of the poorer classes, viz., congenital debility plus insufficient and inadequate maternal care.

The artificial feeding of infants is at present going on to an enormous extent, as may be judged by the great variety of artificial foods now in vogue, and the large way in which they are advertised. If, as a commercial maxim says, the supply is regulated by the demand, the demand must be large indeed. It cannot be gainsaid that very many artificially-fed children are puny and weakly, and it has come to be generally accepted that these children *are* puny and weakly *because* they are so fed. On the other hand, an analysis of any 100 wasted and weakly children will show that a considerable number of them have been breast-fed; and further, that of those which are being artificially fed, many were puny and weakly when artificial food was commenced, and that artificial food was either added to the nursing, or substituted for it, because the children were not thriving on breast milk alone.

What inferences, then, are to be drawn from these facts? First and chiefly, that many children are congenitally deficient in the vitality and digestive power which are absolutely essential to their healthy development. *Such children will be weak and puny on any diet.* Such children as these, moreover, are just the kind of children we should expect to be born of women, of parents, themselves weakly, either congenitally or from acquired causes such as irregular modes of living, drink, poverty with its attendant privations of food, fresh air, daylight, rest, and the like. Can women exposed to such conditions as these be expected to give birth to strong, healthy children, or even to produce good milk in sufficient quantity to nourish their children properly?

Towards deciding the issue raised, I will give an analysis of 100 histories of artificially-fed children under twelve months of age, taken from among my patients attending the East London Hospital for Children. The cases are not specially selected, but have been taken just as they came to hand. I believe the results would not differ much if I had analysed 1,000 instead of 100, nor do I think that any very important divergences would be found if the cases had been taken from private instead of from hospital practice.

An analysis of 100 cases of artificially-fed children:—

In three cases the mother had died, and the child was being brought up by strangers.

In two cases (illegitimate) the mother had deserted the child and it was being brought up by strangers.

In one case the child was taken from its mother because she had puerperal mania.

In two cases the mother had been sent to prison.

In seventeen cases the mother was too weakly to suckle her child entirely.

In thirty cases the mothers' milk was "hungry milk," by which is meant milk "which does not seem to satisfy the child."

In twenty cases the milk supply was deficient.

In twenty-five cases the mother was obliged to go out working during the day, leaving the child to the care of strangers.

= 100 cases.

Otherwise stated, in eight cases the mother was not available for nursing purposes. In seventeen cases she was said to be too weakly to nurse. In twenty cases the milk supply was deficient in quantity. In thirty cases the milk was deficient in quality; there was a fairly good supply, but it did not satisfy the child. In twenty-five cases the mother was poor, and had to earn a living for her family, which is equivalent to saying that the baby was neglected.

A further analysis of these cases shows that in 75 per cent. the mothers' milk was deficient in quality or quantity from one cause or another. This is another way of saying that the mothers were deficient in power, or overtaxed in strength. They had been obliged, in fact, to be doing heavy manual work during their pregnancy, and up to within a few days, or hours even, of their confinement. One of the women had had thirteen children in ten years. Several of them had had three, four, or five children in three, four, or five years; that is to say, a child every year. In a few cases there had been a fair supply of milk, but the mothers had been advised to feed the child, and not to suckle, because of a tubercular habit. One or two of the women were syphilitic, and had not suckled on this account. In 35 per cent. of the cases the mothers were acting on medical advice in not suckling their children. In 92 per cent. of the cases the children had been suckled for varying periods (from a few days up to weeks or months). In only eight per cent. the children had never had the breast at all.

The foregoing details may be briefly summarised; they show  
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that in a very large percentage of cases the lowered health status of the mothers is obviously the reason why artificial feeding of their children has to be adopted. It does not require any long experience to enable one to predicate that if the mothers are weakly, their offspring likewise will be weakly. It follows, therefore, that the reason why so many children are fed on artificial food is, that they do not thrive on the breast milk of their mothers, or that they do not thrive on that alone, either because it is insufficient in quality or quantity, or because the children are too weakly properly to assimilate it. Among the higher classes, late hours and the various exactions of social life, money anxieties and luxurious living take the place of the physical hardships and semi-starvation which obtain among the lower classes, and not less surely but in a different way react alike on the constitution of the pregnant mother and on the foetus in uterus. After birth, however, the child of the rich, even if not suckled, has every attention and care which money can procure, while the poor child continues to experience the deprivations inseparable from its surroundings.

Thus, in estimating the causes and treatment of marasmus and other kindred diseases in infancy, it appears to me that *too much stress is laid on artificial feeding, and especially on the injurious effects of starch-containing foods*, and that too little stress is laid on the *congenital debilities* under which vast numbers of children labour. It is on these points that I specially wish the opinions of Fellows of the Society. The extent to which the starch theory is emphasised in our text-books, and by our leading authorities, may be gauged, in some measure, by the efforts made by the purveyors of infant foods to outdo each other in the completeness with which all starch particles are broken up into less dangerous and more digestible compounds, showing, as it does, how largely this doctrine has permeated even non-professional circles.

By none more dogmatically than by me, has this doctrine been promulgated in years past. But latterly a more independent and wider view of the subject—its proximate as well as its predisposing causes—has induced me, first to doubt the truth of the starch dogma, and now to reject it all together. I stand forward to-night an avowed sceptic of the doctrine that starch food, *per se*, is injurious to the infant organism. Let me be quite clear. I do not question the immense value of good maternal nursing, nor underrate the dangers and disadvantages of artificial feeding, as

commonly carried out, nor that infants are unable to digest starch. I simply state my belief that starch foods are not actively injurious, and for the following (among other) reasons :—

That many and many a child is now alive and well to testify against such a doctrine.

That in years gone by, before malted foods came into vogue, hundreds of children did well on milk, thickened with a little of one or other of the starch-containing cereals.

That there are no experimental investigations to warrant such an assertion.

That, as is well known, animals, when fed on starch, do not get rickets and the diseases usually attributed to starch-feeding ; *they die of inanition.*

That the starch taken in with the food passes out with the faeces *unaltered*. If it could be shown that the starch were broken up into other and deleterious compounds, there would be something definite to go upon ; but, as a matter of fact, the starch passes out of the body unaltered.

One of the most deplorable matters in this connection is the growing use of artificial foods. If prepared so that the starch is all or nearly all reduced, there is an idea abroad that such foods may be safely ordered and given ; this idea is not alone confined to members of our own profession, but prevails largely among the public. As a result, much less cogent reasons now suffice than formerly to warrant the substitution of artificial food, either in part or entirely, for the breast milk. Unfortunately, the privation of mother's milk is seldom the only privation which results from the practice of artificial feeding. Among the poorer classes—and it is essentially among these classes that the worst effects are seen—deprivation of mother's milk means deprivation of a mother's care, of the thousand and one little attentions which are as essential as suckling to a delicate infant. Quite irrespective of the diet itself, artificial food requires immense care in its modes of preparation ; I find that the troubles which are sometimes attributed to the kind of food as often as not depend on its faulty preparation and administration. Not in this particular only are the mothers often wanting in knowledge and experience ; in poor homes where life is a perpetual scramble—a veritable struggle for existence—there can be very little of that home-teaching which is

such an important element in successful house-management in better stations of life; the girls grow up, marry, and become mothers without having been taught or learnt any of the duties which pertain to motherhood. Among the better classes there is less mortality among the young children, for all the conditions of life are better. Nevertheless, there are many weakly, athrepsic children even among the richer classes, for the congenital debilities of which I have spoken obtain also among these classes; after birth, however, the children being much better cared for, gradually overcome this debility, and finally grow up notwithstanding.

The advantages of suckling do not rest entirely with the infant. Besides the popular tradition that a woman does not generally conceive while suckling—a tradition I hold to be well founded—it is clearly advantageous to the mammary glands that their functions should be allowed to go on in a normal manner; lactation should come to an end after parturition as gradually as it develops into activity during pregnancy. Rapid child-bearing is very debilitating; this is especially the case among poor, overworked and underfed women, and, in my opinion, is one of the most potent of the debilitating influences with which we have to deal in this connection.

In a certain proportion of the cases, I find that mothers have adopted artificial feeding because they are not strong enough to nurse. I should like to raise this question, and to learn the opinion of Fellows of the Society upon it. I have met with a few undoubted cases where such an argument has appeared to be justified; but the cases are certainly uncommon, and it may be safely asserted, I think, that the causes are preventible.

In my analysis I stated that in 35 per cent. of the cases the mothers were acting under medical advice in not suckling their children. Even if those cases be excluded in which there was some physical reason (absence, retraction, or ulceration of nipple, mammary abscess) to necessitate such a course, still the proportion of cases is large in which mothers desist from suckling with the consent of their medical advisers; I am inclined to think that the habit of not suckling is largely on the increase, that slighter causes suffice to justify it now than formerly, and that this in some measure depends on the belief that if artificial food, free from starch, is given, little harm results from the practice. Before sanctioning artificial feeding in any given case, I would recommend

a careful consideration of all the circumstances, and have pointed out the advantages of suckling to the mother, as well as the dangers of artificial feeding to the child. If the profession would steadily discountenance artificial feeding, and as steadily urge breast-feeding, much good would, I am sure, result to mother and child alike.

Among reasons given and accepted as sufficient for not nursing are the following: tuberculosis or syphilis in the mother. For myself, I may say that I have never met with a case in which a mother has given any constitutional disease to her own offspring through suckling it. As regards tuberculosis, a very transmissible disease in some families, it would be difficult to prove that it was conveyed by suckling the infant; surely tendencies to a disease are much more likely to be derived from the far more intimate relation between mother and *foetus in utero* than from breast-feeding. As regards syphilis, Colles' law is not known to have any exception.

Not so many years ago, before these artificial foods had been invented, wet nurses were in great request. Such an arrangement was admirable, when the supply of milk was sufficient for the child and the nursling, and when both were allowed to partake of it; but it was disastrous to the child when the child had to give way to the nursling, as was only too often the case. But other evils and misfortunes than this tended to bring wet nursing largely into disuse, viz., the danger of conveying disease either from the foster-mother to the child or *vice versa*. I am inclined to think that it was this occasional conveyance of disease to or from a suckling infant, which is responsible for the widespread belief to which I have just alluded that certain dyscrasiae, or *constitutional conditions*, may be conveyed by a nursing mother to her child through the breast milk. My own experience, however, does not furnish me with a single example in point. The mother who bears a child will impress upon it any constitutional peculiarity she herself possesses; it appears to me quite impossible that her milk can subsequently convey any further constitutional infection. Thus, I think, that to desist from nursing because the mother may be tubercular is certainly a mistake as far as the child is concerned; as I have said, and for reasons already alluded to, the normal discharge of the maternal duties during a normal period is equally advantageous to the mother.

I cannot doubt that much harm has resulted from the almost

exclusive attention which has been fastened on this factor in infantile dyspepsia. It seems, not infrequently, as if the last word had been said, the last effort made, when a milk diet or malted food has been ordered. The question is no mere quibble. So long as we teach, and act on the supposition, that artificial food is injurious chiefly on account of the presence of starch, so long will the far more important factors in marasmus continue to exist and to increase.

I now approach the end of my thesis. The Fellows of the Society will see, from what has preceded, how I have been gradually led to change my views, and have come to regard *infantile athrepsia*, not as the result of artificial feeding—*least of all as the result of starch food*—but as a congenital debility, a condition largely due to the untoward surroundings and mode of life of the parents.

Such being the facts, what can be done? I can do no more than hint at the remedies. They must be partly curative and largely preventive. I will not enter on the very large subject of foods and of diets for such children; clearly, there can be no hard and fast line, *for there is a strong personal element* in each individual case. Briefly, I should say, urge a mother to suckle, entirely if she can, and if not, in part, especially when the child is weakly and while the child is young; if other than breast-milk must be used, be careful to have it fresh and good and adequately diluted; if a child thrive on diluted or pure milk so much the better; let well alone; but if a solid food must be added, insist on some simple food, in moderate quantity, carefully prepared and administered, rather than upon some highly-elaborated and largely-advertised nostrum, with the exact nature of which you are unacquainted. Let it be remembered that *fresh foods* are far better than *prepared foods*, and that the processes of pancreatising and of malting tend rather to destroy this freshness.

As regards preventive measures, seeing that I attribute far more influence to congenital debility and to the home surroundings of these children than to starch foods, it will be obvious that I should seek to lessen the amount of this infantile marasmus by lessening the causes which lead to it. For so long as adverse conditions of living persist, so long will be born marasmic and wasted infants. For such children, the conversion of the few

grains of unaltered starch into dextrose, which each individual child daily consumes, will continue to prove a delusion, and be utterly inadequate to affect the question one way or another. Our sanitary inspectors would pronounce absolutely against the wholesomeness of milk produced by cows fed in such places as are occupied in every large town by crowds of child-bearing women, and would condemn, as unfit for the rearing of cattle intended for human food, places which yet serve almost unchallenged, as habitations—I will not say homes—for suckling mothers. Can it be wondered at that so many of the children die of marasmus and kindred disease?

Has not the time come for a reconsideration of this starch dogma, and for a protest by the whole profession against the continuation of a system of local government which permits human beings to be bred and born, to live and die, in surroundings long since declared unfit for animals on which we feed?

Dr. GIBBONS had listened with great interest to Mr. Parker's paper, and felt great diffidence in stating his own opinions, which were, to a great extent, contrary to those of Mr. Parker. He agreed that the administration of starch was not so injurious as generally supposed. Many infants were born only to die, in spite of change of wet nurses, and in those cases it was not fair to say it was the form of diet that killed them. It would be a fairer test to take 100 babies, and at 2 months of age place them all on starch food. Some children thrived on starch; they would probably thrive on anything. The fact that starch passed unaltered was an argument that it was doing no good. In many cases he had traced the onset of diarrhoea and exhaustion to the commencement of a starch diet; but the greatest point against the starch theory was that it was not an imitation of nature. The best food possible for children was a close imitation of human milk.

Dr. ALLCHIN regretted that Mr. Parker had given no information as to the composition of his artificial food. If we had any tendency to be led astray by ignorance of the action of starchy food, then Mr. Parker had a right to call us to order. He thought the question whether starch was harmful or not as starch could only be settled by experimental evidence and could only be upset by similar evidence. Children brought up on starch might live in spite of it, and so also might adults. He had been led to consider that starch was actually harmful. The saliva contained active ptyalin at the second month, and there was strong reason to believe that pancreatic amylase was active very early. He thought the starch products were harmful. Milk contained a minimum of carbohydrate.

Dr. DE HAVILLAND HALL referred to the puppies belonging to the late Dr. Francis Harris of St. Bartholomew's. They were fed on biscuit only, and got ricketts. Later they were given cod liver oil, and improved.

Mr. PARKER, in reply, said, in experimental investigations of this kind on young animals there was always a difficulty, because the animals were so often kept under such deplorable hygienic conditions that it was quite

impossible to say that the results depended on the starch-food *per se*. He had himself seen such investigations conducted, and thought them of little value. As regarded chemical evidence, this went to show that the starch passed through the body unaltered. In the great majority of cases, the artificial food alluded to in the paper consisted of milk or milk and water, slightly thickened with a little of one or the other of the advertised infants' foods or baked flour.

## GLOSSITIS MIGRANS SUPERFICIALIS.

By THOMAS WHIPHAM, M.B.

TO-NIGHT I would bring under the notice of the Society two cases of a circinate eruption of the tongue, which, though frequently seen among children, is, so far as my reading and experience go, a rare disease in adults. Until the year 1880 no case had been recorded in this country, even in children, although it had been described as early as 1869 by Gubler, and again, in 1872, by Bridon. Subsequently Parrot and Vanlair devoted much attention to the disease. In 1880 Mr. A. E. Barker recorded a marked case of it in the 'Path. Soc. Trans.' (vol. xxxi, p. 353), and on May 10, 1884, Dr. T. C. Fox published an able paper in the 'Lancet,' in which he refers to all previous writings on the subject.

All these observers concur in their descriptions of the general appearance of the changes of the tongue, but there is a great difference of opinion amongst them as to the pathology of the disease, and an almost greater variety in the names which have been given to it.

Mr. Butlin, in his 'Treatise on Diseases of the Tongue' enumerates most of them, viz., Wandering rash (Barker); Ringworm of the tongue (Fairlie Clark); Circular exfoliation, Geographical tongue (German authors); Lichenoid eruption (Gubler); and by M. Lemonnier in his 'Thèse de Doctorat,' Paris, 1883, it has been termed Glossite exfoliatrice marginée.

CASE I.—Fanny Bushnell, aged 35, a domestic servant, was admitted into St. George's Hospital under my care on April 3rd, 1886, on account of mitral disease, the result of rheumatism. She was at this time very ill, suffering from ascites and general dropsy. It was then noticed that her tongue was the seat of a peculiar circinate eruption, the centre of each patch being red and raw in appearance where the papillæ were denuded of epithelium, and that each patch was bounded by a sinuous raised margin, rough or ragged looking, and of an opaque yellow colour. The tip

of the tongue was mainly involved, but there was also a distinct patch, similar in character, on each side, extending to the margin of the organ. The dorsal aspect of the tongue was chiefly involved, but at the tip and at the edges the disease had crept, as it were, over the margins on to the inferior surface.

No treatment beyond that specially directed to the alleviation of the general symptoms produced by the cardiac disease was adopted, and yet on April 21st the eruption on the tongue had almost entirely disappeared; but, two days later, several fresh patches, irregular in outline and spreading rapidly, had made their appearance. A local application of Boracis gr. v, Potass. chlor. gr. v, Glycerin. amyli 3*ij*, Aq. 3*v* was prescribed as a wash to be used frequently, and the eruption again disappeared as before.

On May 3rd it was as bad as ever, and the patient complained of a dry hot sensation in her tongue during the night.

On May 7th the right side of the tongue was normal in appearance, but the disease lingered, though better, at the tip.

On May 9th it had broken out again, the back part of the right margin being chiefly affected.

On May 12th it had entirely disappeared, with the exception of a small patch on the left margin of the tongue, near the tip, and another small one at the back of the right margin. These patches at this time, however, were simply areæ denuded of epithelium, and had no raised yellow boundary lines.

On May 13th the serpiginous boundaries had commenced to return, and the centre of the dorsum was involved: on the 15th the edges of the tongue were involved, but the centre of the dorsum was free.

On May 22nd I scraped the sinuous boundaries of the patches, and Dr. Delépine, without knowing whence the specimen was derived, noted, as the result of his microscopical examination, that there were in it collections of micrococci surrounded by numerous epithelial cells evidently in a state of proliferation.

The general health of the patient was by this time greatly improved, but still the eruptions persisted with varying intensity. On July 5th there was a patch, in all respects similar to that above described, save that it had no raised boundary, on the right margin near the root. She was still suffering from ascites, but had no general dropsy, and she was transferred to the Convalescent Hospital at Wimbledon.

She was readmitted on November 14th, 1886, with recurrence of all her cardiac troubles, dropsy, &c. The eruption on her tongue was still present, but caused no discomfort. She lingered till December 14th, 1886. During the month the tongue affection varied greatly in extent, as it had done before, but she was never free from it up to the time of her death.

CASE II.—Arthur Woodward, a waiter, aged 22, was admitted into hospital under my care on December 10th, 1886, suffering from symptoms of enteric fever. His general health had been always good, and he could recollect no previous illness, nor had he at any time noticed anything amiss with his tongue. The symptoms of enteric fever dated from November 30th, and in the course of the treatment he had two half drachm doses of antipyrin, one on December 20th, the other two days later. The temperature on one occasion only (December 17th) reached 104° F., and the pulse, save on the first two days, was never above 96. Altogether the fever ran a mild course, although the temperature did not fall to normal until the thirty-third day. It was characterised by inaction of the bowels.

The urine at the commencement contained from 2.1 to 2.9 per cent. of

urea, and only on the twenty-fourth day there was a trace of albumen in a urine of specific gravity 1030 ; otherwise it was free from albumen.

On December 12th a patchy white coat was observed on the dorsum of the tongue.

On December 26th the coat was posteriorly brown, but the tongue was moist. Anteriorly, towards the margins especially, and on the under surface, was an eruption precisely similar to that described in the first case. The sinuous margins were especially developed. In scrapings from these boundary margins a few spores were observed under the microscope, together with the mycelium of oïdium albicans, the latter being insufficient in amount to render the case one of pure oïdium.

On January 5th only a faint trace of the eruption remained on the right edge and tip of the tongue. Mel boracis had been applied to it for a few days, but was omitted on January 3rd.

Two days later the eruption again made its appearance, but in a milder form, that is to say, the patches were denuded of epithelium, but there was only slight evidence of the raised sinuous boundaries.

On January 15th the patient was allowed to get up, the eruption still persisting on the tip and left edge of the tongue, while on the right edge were several more or less circular denuded patches, situated one behind the other, their raised yellow boundaries being especially well developed. The filiform papillæ which stood out clearly in the bases of the denuded patches were uncovered by epithelium, but the fungiform papillæ, though prominent, were normally invested.

On January 31st one circular denuded patch remained, after several variations in the interval, on the right edge of the tongue ; there was but little of the marginal thickening ; over the affected portion the filiform papillæ stood up clearly defined and devoid of epithelium, so far as could be ascertained by the naked eye. The remainder of the tongue was of a brownish colour, but it could scarcely be said that a genuine coating was present. In this condition the patient left the hospital, perfectly recovered.

The treatment in the early stages of the disease consisted of sulphuric acid in infusion of roses ; subsequently effervescent mixture of Potassium citrate, the two doses of Antipyrin already mentioned, and during convalescence Iron and Quinine.

This patient was repeatedly questioned as to any previous affection of his tongue, but he denied the knowledge of anything of the kind ; nor during his residence in hospital, while the eruption was present, was he conscious of the least discomfort. So far as he knew, his taste was quite natural.

On March 2nd he presented himself for inspection. Two large denuded patches involved the left edge and dorsum of the tongue, but there was no raised sinuous margin to either of them. He suffered no inconvenience whatever, had gained flesh, and was perfectly well.

March 31st. The patient again presented himself. Little or no change had taken place in the tongue ; but he looked well and had gained flesh.

The clinical description of the affection given above accords precisely with those of the various authors who have already treated of the subject.

Of the tongue of my patient Bushnell, on whom a post-mortem examination was made, the appearances may perhaps be given somewhat more in detail. In the examination of this tongue I have had the advantage of the co-operation—I might almost say superintendence—of Dr. Delépine, who took great interest in the two cases. Briefly, then, in the tongues of both patients, but more particularly in that of Bushnell, there were three distinct areae in each affected patch:—First, a central area, over which the papillæ were denuded—completely so, as far as could be ascertained by the naked eye—of epithelium, an area which in the living state looked red and raw. Secondly, outside this red area was another, smooth, jelly-like, yellowish, and semi-transparent; this coat extended superficially to the level of the summits of the papillæ. Thirdly, an outer sinuous boundary ridge, which has been so well depicted by Mr. Butlin in his book, and which is most faithfully represented in the drawings by Dr. C. Slater, Medical Registrar at St. George's Hospital, and by Mr. W. J. Beauchamp Carter, my clinical clerk. This narrow raised boundary line had a rough, somewhat granular, or almost ragged appearance, was opaque, and of a yellowish-white colour.

Microscopically these naked eye appearances presented the following characters:—In the central red area the tongue was denuded of its epithelium almost entirely; in fact the papillæ were only covered by a thin layer—a layer of single cells—the deeper parts of the epithelial investment. In the middle area the jelly-like coat consisted of masses of degenerated cells, more or less fused together, whose outline and general form were indistinct. This was the layer which extended to the level of the summits of the papillæ. Further outwards again, in sections of the raised opaque boundary ridges, the papillæ were thickly coated with a dense layer of ragged proliferated epithelial cells. This coating gave each papilla, to use Dr. Delépine's expression, somewhat the appearance of a Chinese pagoda. This was, however, the only abnormality observed with regard to the papillæ; they were in no part destroyed.

In parts many of these ragged epithelial accumulations were capped by opaque dark masses, which special staining tended to show were collections of micrococci.

The tissues of the mucosa were abundantly infiltrated, especially in the immediate neighbourhood of the blood-vessels, by cell growth, indicative of the inflammatory process; and in many of the veins the blood was granular in appearance, and minute dark bodies could be seen adherent to the blood corpuscles. The drawing represents the more prominent microscopical appearances.

These observations confirm those previously made by Vanlair and Lemonnier; the latter of whom, in his thesis above mentioned, describes a vacuolation of the epithelial cells, indicating a superficial inflammation of the epithelium, and probably of the tongue itself; while Vanlair describes "the affection of a subacute papillitis of the filiform papillæ, and that white patches are formed by the proliferation of the epithelium which subsequently exfoliates copiously. In this process the papillæ are sometimes destroyed." (Dr. T. C. Fox's Translation.)

Martin, clinical assistant in Parrot's laboratory, found, in three tongues examined, that the derma was the chief seat of the disease; the epithelium was thickened and swollen, the cells of the corneous layer increased in volume; the rete was also actively proliferating, and the papillæ and adjacent derma contained many lymphoid corpuscles around the vessels. In this account Parrot concurs.

Various opinions have been expressed as to the pathology of the disease. Mr. Butlin's is to the effect that it is not an inflammation. Some observers, and especially Vanlair ('Rev. Mens. de Med. et de Chir.,' January 10th, 1880), have mentioned the rounded masses, described above, as forming caps to the ragged epithelial covering of the papillæ, and consider them to be aggregations of micrococci; but for all that they are agreed in thinking that the disease is not of parasitic origin.

Dr. Delépine and myself directed special attention to this point, seeing that the appearance of the eruption on the surface of the tongue, and its eccentric extension, much after the manner of ordinary ringworm, forcibly suggested a parasitic origin. We were, however, unable to demonstrate any such cause of the affection.

It may be remarked, nevertheless, that in four out of Dr. T. C. Fox's ten cases, ringworm of the body was present, he failed, however, to detect the fungus in the tongue in any of the four.

Parrot, following his usual bent, considered the disease to be

due to syphilis, but in this theory he is unsupported by any other writer. The rapid spread of the eruption, and its equally sudden disappearance, in the absence of specific treatment, together with the absence, in the majority of the recorded cases, of any syphilitic history, tend strongly to negative this view of the pathology.

It has been suggested that debility may, to some extent, furnish an explanation of this peculiar affection. But, if so, it is difficult to understand why the eruption is not of everyday occurrence. Surely, if debility were the cause of it, many persons who have been exhausted by acute or prolonged disease, would be similarly affected. The eruption, on the other hand, persisted in the case of Woodward, when he was to all appearance in robust health.

Mr. A. E. Barker and others are disposed to attribute the departure from the normal condition of the tongue to nervous influence, basing their arguments on the gastro-intestinal disturbance, which so frequently precedes or accompanies it in children. Dr. T. C. Fox adopts this view. Lallier and Archimbaud, too, have observed it to follow any failure of health in children.

It is impossible to dogmatise in the case of nervous influences, but it may be remarked that in the tongue which we submitted to careful microscopical examination, the nerves were to all appearance perfectly natural.

As has been stated, the disease is far more common in childhood. Lallier, however, observed it in a man of 20, and Vanlair in two ladies, one of 20, the other of 66 years of age. My own two patients were 22 and 35 respectively.

The chief characteristic of the eruption is the rapid change which it undergoes, even in a few hours, without evident cause, either local or constitutional, and its almost sudden reappearance when recovery seemed to have been established. This is a strong argument against its parasitic origin; is not an argument in favour of the inflammatory theory; but gives a certain amount of support to that based on nervous influences. Even so it is difficult to assume such nervous disturbance when the patient is (as Woodward was on March 2nd), both in appearance and feeling, in perfect health, with the eruption still persistent.

The duration of the eruption seems uncertain, children, as a rule, judging from recorded cases, eventually recover. My own patient, Bushnell, however, had noticed the peculiar condition of her tongue for many years; but, as it caused her no inconvenience,

she had paid no attention to it. The man Woodward knew of nothing of the kind before it was observed in hospital, and when questioned, after his complete recovery, as to any pain or discomfort in that part of the tongue on which the eruption still lingered, he denied anything of the kind, and said that his tongue "felt just as usual." Seeing that subjective symptoms are commonly absent in these cases, Woodward may possibly have been in ignorance of his condition for many years.

The position of the eruption is for the most part on the dorsum of the tongue. Mr. Barker states that it does occasionally creep over the margin, and so involve the under surface. In both of my patients this was so. In this observation Dr. T. C. Fox and Vanlair agree, while Bridon has observed it only on the dorsum.

With regard to the treatment of this affection, various methods, both possible and impossible, in the case of children have been advocated. I could not, however, satisfy myself that any constitutional treatment, or local application, were productive of good. Glycerinum boracis, Mistura chlorinæ, Potassii chloras, Borax and Glycerinum amyli combined, Acidum Carbolicum, Alum, were all tried in turn, but the eruption subsided and reappeared apparently unaffected by any of the remedies adopted for its relief; no matter whether the patient was prostrated, as was Bushnell, by concurrent disease, or convalescent, as Woodward, from an acute disorder.

Reviewing the results of our microscopical examinations, I am inclined to support Lemonnier's view of the pathology of the disease, and to attribute it to a superficial inflammation; basing this opinion on the observation that both the papillæ and the mucosa were the seat of an abundant cell proliferation and infiltration; the cell proliferation being especially manifest in the immediate neighbourhood of the blood-vessels of the mucosa, as is represented in the sketch of the microscopical appearances; and on the fact that in a scraping of the raised yellow margin of one of the patches on Bushnell's tongue aggregations of micrococci were seen, and around them proliferated epithelial cells.

If this theory be accepted, such names as "Wandering rash," "Annulus migrans," excellent as they are in that no theory unsupported by facts is involved, may be discarded in favour of one based on more recent observations.

The name *glossite exfoliatrice marginée* seems to be more accurate than any hitherto employed to designate the disease, and,

as the result of my own observations, I would venture to translate that expression by the words *glossitis migrans superficialis*.

It is impossible to say, from the study of the two cases recorded, whether the inflammation, if it be such, is due to some local irritation, or to an unexplained functional derangement of the nerves of the tongue. At all events, from recorded cases and recent observations, both a syphilitic and a parasitic origin are distinctly negatived, although the evidence of a case exhibited in 1881 to the Medico-Chirurgical Society, by Mr. Clement Lucas, goes to prove that it may occur in persons who are the subjects of the former disease.

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*April 18th, 1887.*

## A MODE OF RESTRAINING HÆMORRHAGE DURING OPERATIONS UPON THE TONGUE.

By C. B. LOCKWOOD, F.R.C.S.

Most surgeons will admit that when hæmorrhage occurs during operations upon the tongue it is a serious complication. Cases might be mentioned in which it has proved fatal, and many plans have been devised for its prevention. A mere enumeration of these would be a considerable task; but, amongst them may be included ligature of the lingual artery in its continuity, ligatures applied in a variety of ways about the base of the tongue, and the use of écraseurs. Without doubt, efficiency can be claimed for most of these methods; but I think it will be allowed that none is entirely free from disadvantages. However, a detailed discussion of the different plans would not particularly bear upon that which follows, and, therefore, this branch of the subject need not be dwelt upon. It is quite possible that the method which I am about to describe has been thought of before, and perhaps put into practice; but, as far as can be ascertained, it is not familiar to surgeons, nor is it mentioned in ordinary literature. Whatever may be the truth upon this point, it cannot be without use to call

attention to a simple method of controlling hæmorrhage from the tongue. Before describing this plan it is necessary to refer briefly to the anatomy of the arterial supply of that organ. For practical purposes the lingual arteries are the only sources which call for notice, and the peculiarities of these vessels are well known, and may be briefly discussed. Arising from the external carotid opposite the greater cornu of the hyoid bone, the vessel ascends a little way, and then turns sharply downwards towards the greater cornu. After making this bend, the artery runs onwards parallel to the hyoid bone, and then turns upwards to reach the tip of the tongue. In pursuing this course the vessel passes first of all beneath the digastric and stylo-hyoid muscles, and then beneath the hyoglossus: its termination, the ranine artery, that part of it which runs towards the tip of the tongue, does not require to be described. It, therefore, follows that the *tip* of the greater cornu of the hyoid bone is a very good guide to the looped or first part of the lingual artery, whilst the greater cornu itself marks the second. Either of these portions of the vessel is comparatively superficial, and they have few coverings beyond those which have been mentioned. For instance, its loop is merely covered by the skin and superficial fascia, deep fascia and platysma; whilst the second part has in addition some of the stylo-hyoid and digastricus muscles. As this is not intended to be an exhaustive account of the relations of the lingual artery, we may now review the deeper relations of its first and second parts; that is to say, the deeper relations of the vessel before arriving at the tip of the greater cornu of the hyoid bone, and its relations where it runs parallel to the bone. Although those relations are very important, nevertheless they are exceedingly simple. Immediately after its origin, the artery applies itself to the side of the pharynx, lying upon the middle constrictor, and continues in contact with the walls of that cavity until it has reached the body of the hyoid bone. If the tissues which cover the lingual artery are scanty those beneath are still thinner. The vessel is only separated from the interior of the pharynx by the middle constrictor, pharyngeal aponeurosis, and mucous membrane. It is not easy to convey a clear idea of the way in which the walls of the pharynx approach the surface of the neck in the region of the greater cornu of the hyoid bone. But an examination of the dissections which are upon the table shows that the inner surface of the greater cornu protrudes into the pharynx, and makes prominent the mucous membrane

which covers it; and when it is remembered how near the greater cornu is to the surface, we begin to realise how thin the tissues are which intervene between the skin and the mucous membrane. Indeed, nothing is more common than in teaching operative surgery to see those who wish to ligature the lingual artery fail in the attempt, and, unaware of the thinness of the tissues, open the pharynx.

Being aware of the fact that the lingual artery lay at its commencement upon the wall of the pharynx, and that the whole thickness of the tissues at that place was barely half-an-inch, I conceived that, anatomically, there could be no difficulty in compressing the vessel by means of a suitable apparatus. And, moreover, the singular constancy of the position of the vessel lent itself to this proposal. During more than six years I am not aware, either in the course of dissection or in performing operative surgery, of having seen the lingual artery absent from its usual position. The only variation which seems at all frequent is for the artery to begin by a trunk common to it and to the facial; but, when this is the case, there is practically no difference in the course of the vessel. The dissecting-room of St. Bartholomew's Hospital has afforded every opportunity for making experiments to find out the best way of compressing the artery, and, after many attempts, a pair of forceps was devised suitable for the purpose. These instruments are exceedingly simple. The blades are about 3 inches long, and one of them is very slightly bent, and is adapted for being passed down the sulcus by the side of the tongue into the pharynx; the other blade is curved to fit the contour of the lower jaw and is intended, when adjusted, to lie upon the face and neck. The joint which unites the two blades is quite ordinary, and needs no particular mention. Just beyond it is the mechanism for fixing the blades. This arrangement consists of a steel rod, which is fastened into the inside blade, and passes through a slot in the other. This rod is provided with a very coarse screw, so that a nut which runs upon it moves up and down easily and rapidly. If, now, we turn to the opposite end of the forceps, one or two slight peculiarities are to be noted. In the first place, they are arranged so as to meet together, parallel to one another, for quite an inch; and in the next place, the end of the pharyngeal blade is made exceedingly blunt. This is a matter of some importance, because it was found that there was a danger of piercing the

mucous membrane if the blade was at all sharp. These forceps having been made, the next step was to ascertain whether they answered the purpose for which they had been contrived. During the last two winter sessions many trials were made upon subjects which were being prepared for dissection, and various slight modifications were found necessary. I may state at once that the instrument was quite efficient, and when properly applied to the lingual artery, where it lies near the greater cornu of the hyoid bone, ordinary embalming fluid could not be forced through the vessel after it had been severed near the base of the tongue. Indeed, it was found necessary to keep the forceps on while the process of injection was being completed, in order to prevent the fluid escaping from the divided artery. Recently, to satisfy myself still further, the forceps having been adjusted in a manner which will be described presently, a dissection was made to ascertain their exact position. It was found that they grasped and completely occluded the lingual artery. A canula was fixed in the common carotid artery, and a column of water 6 feet high was run into the vessel. Although the fluid ran freely from other divided branches of the external carotid, none came from the lingual artery. The dissection also demonstrated another point, which will prove interesting later on, for it showed that the lingual vein was also within the grasp of the forceps.

To my mind these experiments show conclusively the feasibility of compressing the lingual artery, and the next step was to ascertain whether the plan was equally successful in actual practice. Before narrating the results of this trial, perhaps it may be advisable to describe the way in which the forceps ought to be adjusted. It may be remembered that the object in view is to compress the lingual artery as it runs from the external carotid towards the greater cornu of the hyoid bone. The process, therefore, is quite simple. The mouth having been opened and fixed with a gag, the nearly straight pharyngeal blade of the forceps should be guided with the finger along the sulcus by the side of the tongue, until it has reached as far as the tip of the greater cornu of the hyoid bone. It is easy to ascertain when this point has been arrived at by noticing the position which the outside blade occupies when the blades are brought together. Therefore the tip of the greater cornu of the hyoid bone is the point to be aimed at, and the parallel part of the blades ought to com-

press the tissues, and in them the artery, which lie immediately above and behind it.

The forceps were used for the first time upon a case sent to me by Mr. Greet, and in which it was necessary to remove the right half of the tongue for epithelioma. Since there is practically no anastomosis between the lingual arteries, only the vessel which belonged to the diseased side was compressed. As soon as the forceps were applied it was noticed that half of the tongue became pale. The operation was quite simple; the organ having been divided with knife and fingers along the median septum, the right half was removed with scissors. The lingual artery, which did not pulsate, was tied and divided. The operation was practically bloodless, and required but a short time for its performance. The wound healed well and rapidly, and the patient seemed to suffer no inconvenience from the application of the forceps.

Since this operation Mr. Willett has very kindly tried the forceps in three cases. He informs me that the first time, at which I was not present, the application of the instrument was followed by a good deal of venous congestion, but that during the operation there was no arterial haemorrhage. The dissection which has been described throws light upon the cause of the venous congestion, for it may be remembered that a dissection made after the application of the forceps showed that besides the artery they grasped the lingual vein. It can hardly be said that this occurrence is of great importance, or that it can be considered a serious disadvantage. The course of the lingual vein is so variable that it is hardly likely to be often compressed, and it is difficult to imagine how it can always be avoided. The second case of Mr. Willett's, in which the lingual artery was compressed, was one in which it was necessary to remove half the tongue. The instrument was applied upon the side which required removal, and during the operation, which was performed with knife and scissors, there was hardly any bleeding. However, after the operation and when the forceps were removed, it was necessary to ligature several small vessels which had begun to bleed. This patient afterwards complained of soreness in the region where the tissues had been compressed; perhaps too much force had been used in fixing the instrument, but no ill result ensued. The last time the forceps were used was in a case in which Mr. Willett, after having

divided the lower jaw, removed all the tissues at the base of the tongue and the greater part of the floor of the mouth. The case was one in which the front part of the tongue had previously been removed for epithelioma. At the commencement of the operation the tissues which formed the stump of the tongue were remarkably pale and dry, but as the operation proceeded several vessels required to be ligatured. Some of the arteries which bled were without doubt derived from other sources than the linguals; for instance, the submental branch of the facial bled freely; but, nevertheless, it was doubtful whether the linguals were properly controlled. Without doubt the case was not an exceedingly favourable one for trying experiments upon; for, owing to the previous operation, the artery may have been disturbed; and, moreover, it was so difficult to feel the hyoid bone, that I was very uncertain whether the forceps were in their proper place. However, although the case cannot be accounted a success like the others, yet I feel it my duty to lay it before you.

There still remains a question which calls for an answer, and it is whether the forceps are in the way during operation? It may be replied that such has not been the case so far, and, moreover, when once fixed, the instruments seem to have no tendency to slip and lose their hold.

In conclusion, I may perhaps be permitted to hope that a sufficient amount of evidence has been adduced to show that compression of the lingual artery is quite feasible during operations upon the tongue. And the experience which I have had up to the present time leads one to hope that in the future it will prove safe and efficacious.

Mr. B. JESSETT had met with alarming hæmorrhage when removing the tongue, which was an operation calling for coolness and decision. The instrument shown was ingenious, and its application feasible. It would, however, interfere with the removal of the tongue in those cases where the anterior pillar of the fauces was also infiltrated. This would leave the instrument to be used only in those cases in which the disease was limited entirely to the tongue; but in excision of part of the tongue they were not necessary, as with slow and careful snipping one could easily see and control the artery at the time of its division. Again, if there were glands to be removed from under the jaw, the lingual artery could be ligatured in its continuity by the same incision. In the subject shown for illustration there was no molar teeth, and the instrument readily slipped, and one would probably require a different sized forceps for different mouths.

Mr. M. SHEILD said that hitherto the instrument had answered admirably, and we should judge by the practical results. He inquired how

long the instrument might be allowed to remain on in an accidental wound of the tongue far back. Such cases were rare, but he had seen one which had been controlled by digital pressure.

Mr. BOYCE BARROW considered any instrument disadvantageous which enabled a surgeon to compress the lingual without making an incision, for in ligaturing the lingual one removed the glands at the same time, and thus insured a better result.

Mr. PYE thought the lever lacked power, and doubted if the instrument would compress the artery if induration had been present.

Mr. LOCKWOOD, in reply, was glad to find that all the speakers agreed as to the feasibility of compressing the lingual artery by this method. He allowed that there must happen cases of cancer in which no instrument could control the haemorrhage, but his instrument was devised for those ideal cases in which one-half the organ was involved and there was no enlargement of glands. He had seen one case die of haemorrhage, in which the tongue was split and removed by scissors. He could have other instruments constructed giving greater leverage.

## A CASE OF CATHETER AND CALCULI REMOVED BY LITHOTRITY.

By H. H. CLUTTON, F.R.C.S.

W.M. B., aged 29, a groom by occupation, was sent to me at St. Thomas's Hospital on September 10th, 1886, by Mr. John Powell, of Weybridge, who, in attempting to relieve him of pain and difficulty in micturition, had found a stricture in his urethra. In passing metal instruments, Mr. Powell felt a calculus in the urethra just behind the stricture, and thought he felt another in his bladder. For seven weeks he had been passing small fragments of stone, and gave the following history:—

Ten weeks ago he had been run over, and received a kick in the perineum from the horse. He was seriously injured, and taken to a country hospital, where he was found to be suffering from a fracture of the forearm, a fracture at the ankle, and a ruptured urethra, with a wound in the scrotum. He stated that a catheter had been tied into his bladder and changed every two or three days. He was in hospital three weeks, and left with the wound healed. From the day he left he had continued to pass small fragments of calculus, and the wound in the scrotum reopened.

On examination a fistula was found at the peno-scrotal angle, and on passing a No. 8 silver catheter a constriction was detected at the same spot. The catheter felt as if it scraped against a calculus

immediately behind the stricture opposite the fistula, and when it reached the bladder another and distinct "ring" could be elicited. A short-beaked sound was then passed, which fully confirmed this impression, that there was a calculus behind the stricture and another in the bladder; the latter felt soft and phosphatic, and was thought to be in fragments.

The explanation of the condition which was found seemed to me to be as follows: that some phosphatic concretion had formed around the catheter which had been tied in, and had then become detached; that this fragment had formed the nucleus of a larger phosphatic calculus in his bladder, and that a portion of this had broken off and passed behind the stricture. His symptoms pointed to a very irritable bladder, which might have been set up by the catheters, and this was sufficient to my mind to account for the deposition of phosphates. It did not strike me that the catheter itself was in the bladder, nor was there at that time any history pointing to this conclusion.

On September 25th (under ether) the stricture was rapidly dilated by Otis's urethrotome, and a lithotrite introduced. I soon found that something was grasped by the lithotrite which was quite unlike a stone, and on withdrawing the instrument a black substance was seen clinging to the jaws of the lithotrite. This looked exactly like the coating of a French catheter, and in a few minutes I was able to demonstrate this point beyond a doubt by the removal of a portion of a soft catheter. As this was of small size, I thought it not improbable that the whole of it might be removed with the lithotrite. After several unsuccessful attempts I eventually removed a piece which, placed in a line with a number of smaller fragments which had been broken off, made a total length of 13 inches. The bladder was very thoroughly washed out with the evacuator, and a considerable quantity of phosphatic concretion in this way removed.

On October 27th he left the hospital, completely relieved of all his bladder symptoms, but a small fragment of calculus could still be felt behind the stricture in his urethra, opposite the original wound, which was soundly healed. He would not allow this to be removed, as he was determined to go home at once.

On December 14th, nearly three months after the removal of the catheter, he came to report himself. He had had no bladder symptoms of any kind. The fistula had remained permanently closed,

and he felt as well as ever he did in his life. A small calculus could still be felt in his urethra, but he would not allow me to remove it.

The following interesting history of how the catheter reached the bladder was obtained by a thorough and exhaustive questioning after the operation:—One night, a week after his admission into the country hospital, a black catheter was tied into his bladder by tape and strapping round the penis. Some hours afterwards, whilst sitting on a bed-pan, he felt a sudden and sharp pain in the penis and bladder, just as if he had been struck violently above the pubes. He called the nurse, and told her that he had felt the catheter slip up into his bladder. She assured him that this was impossible, and pointed to the white bone end still adhering to the orifice of the urethra. He was with difficulty pacified, but eventually turned round and went to sleep. The next morning the house surgeon gave the same opinion, although on removing the bone end the catheter was not to be found. After passing a probe, and failing to find any evidence of the missing catheter, the house surgeon passed another and larger catheter (he thinks No. 10) into the bladder, and tied it in.

From this history it seems clear that the first and smaller catheter must have slipped some distance at any rate into his urethra, and that the larger catheter must have pushed the smaller one completely into the bladder.

The mechanism by which a catheter may slip up into the urethra, and partially into the bladder, seems to be exemplified by this case. In leaning forward, as a man would do in sitting on a bed-pan, the catheter would be drawn towards the bladder. This traction would be resisted by the button at the end of the catheter, and the tape which ties it to the penis. If the catheter and the button then part company during this motion on the part of the catheter, the latter might be made to spring or shoot some distance into the urethra like an arrow from a bow.

Mr. HURRY FENWICK said that three or four cases of a similar sort had come under his notice. In one case in which a filiform bougie lodged in the bladder, a stricture was divided, and the catheter removed by lithotomy. In another an ear of corn had found its way into the bladder; it was removed by supra-pubic systotomy. Calcareous particles had penetrated the grains of corn, forming a large stone.

Mr. PYE thought that Mr. Clutton must have felt some difficulty in accepting his own explanation of the way in which the whole catheter got into the bladder. Mr. Lund, in his lectures, mentioned the fact that good

rubber was almost unacted on by urine, whereas gum resin and common catheters were readily eroded. Some experiments he himself had made showed that no urine, acid or alkaline, acts on pure rubber, but if it were stretched or cracked, or of bad quality, it became rapidly incrusted and eroded.

## RENAL SARCOMA IN INFANCY: IS SURGERY JUSTIFIABLE?

By ANGEL MONEY, M.D., M.R.C.P.

FOUR cases, in which I made a post-mortem examination, were narrated:—

CASE I.—F. R. S., a female child, aged 18 months, entered the Hospital for Sick Children, under the care of Dr. Dickinson, on March 16th, 1882, and died four days later. There had always been a high stomach, and the child had occasionally vomited, but the belly had only attracted special attention for two weeks.

On admission a tumour was found to be springing chiefly from the right side of the belly, and it had all the characters of a renal growth. There was no ascites or œdema, but much anaemia, and the child only weighed 19 lbs.

The necropsy showed that the tumour was in contact with the diaphragm above, extended into the false pelvis below, an inch beyond the middle line, to the left, and measured 6 inches from above downwards, and 6 inches from side to side, and roughly had the dimensions of a "cottage" loaf. The colon and pancreas were situated in front of the tumour, and the new growth had invaded the tissue of the mesocolon. A sanguinolent cyst, the size of a walnut, projected from the tumour, was inevitably ruptured in removing the growth, which could not be effected till the square and Spigelian lobes of the liver had been sliced off along with it, in order to prevent rupture of its contents. The left kidney and suprarenal capsule were natural. The peritoneum was not affected, the growth being situate altogether behind it. The capsule of the tumour was unavoidably ruptured behind in removing the tumour, and a quantity of blood with blue and purple lumps of the neoplasm escaped. The aorta and vena cava were seen at the back of the tumour, which apparently invaded the kidney, compressing and causing atrophy of this organ. The outermost (right) boundary of the tumour was formed by the atrophied and stretched kidney substance. The tumour, of variable consistence, weighing 2 lbs. 10 ozs., was a small round-celled sarcoma with many blood extravasations, but without nodular formations or bands of renal tissue within its interior. There was no striated muscular fibre. The right suprarenal body could not be differentiated. The liver was much flattened and infiltrated with fat, as the microscope proved. Some mesenteric glands were swollen, but there were no secondary deposits in other organs.

CASE II was a female child, aged 2 years 10 months, who was admitted under the care of Dr. Dickinson on March 4th, 1882, and died on May 5th, two months after admission.

There was an enormous abdominal tumour, and only a history of the belly swelling for two months. The swelling was the first symptom, as in the first case. The child had "bronchitis" five weeks before admission. Occasional pains. No haematuria. No other symptoms. Epistaxis on March 26th.

April 8th. Albuminuria for the first time ; no blood.

April 11th. Slight pyuria, causing no symptoms.

At the autopsy a tumour, springing from the right side, a round-celled sarcoma ; the liver flattened and dislocated to the left, as were all the abdominal viscera. The aorta skirted the left side of the sessile base of the tumour, which weighed 11 lbs. 10 ozs. Both ureters were dilated and sacculated. There were many cysts in the tumour filled with clear yellow fluid. No healthy kidney substance could be seen. The tumour pushed up and was in close contact with the diaphragm. Downwards it extended into the true pelvis, and to the left, three fingers beyond the middle line. The right suprarenal capsule was not distinguishable. There were secondary deposits in the lower lobe of the right lung.

CASE III was a female child, aged 21 months, who entered the hospital under the care of Dr. Dickinson on October 9th, and died on October 21st. It was a suprarenal tumour. There were lymph and blood extravasations in the peritoneum, with secondary growths in the liver, lungs, and uterus. The belly had been swelling for six months, and this swelling was the first and chief symptom. But nine months before admission large hairs began to grow on the external genitals, which became enlarged. The tumour was in the left side, and had all the characters of a renal tumour. The mediastinal and mesenteric glands were apparently natural. The tumour weighed 2 lbs. 10 ozs., and had a cottage-loaf shape, measuring 6 inches from above down, 5 inches across, and 4 inches in thickness. It had to be carefully dissected off the diaphragm. The right kidney and suprarenal were natural.

CASE IV was a female child, aged  $2\frac{1}{2}$  years, admitted under the care of Dr. Cheadle on September 27th, and died November 5th, 1883. It was also probably an extra-renal growth ; it displaced and was adherent to the diaphragm. The left adrenal and kidney were normal ; the right suprarenal was infiltrated with new growth. There was a nodule in the lower lobe of the left lung, and two in that of the right lung.

The history showed that the belly had been swelling for twelve months, and this was the first symptom. The child had complained of pain. Behind the uterus was a soft, vesicular, spongy body that had the aspect of a thymus gland, and was perhaps the remains of some of the Wolffian body. The ovaries and uterus were natural.

In all these four cases the first and chief symptom was enlargement of the belly, and in none was there haematuria. In all there were secondary deposits, either in the organs or glands, or else the infiltrations extended beyond the limits of the chief tumour. The cases when first brought were even from the mere size of the tumour not suitable for operation. A valuable statistical paper on the subject appeared in the 'Jahrbuch für Kinderheilkunde,' N. F., Band xxi, s. 276, by A. Leibert.

Fifty cases were collated, the sexes being equally affected; twenty-four times the right kidney was alone affected, twenty-two times the left, and only twice were both involved. So far, then, the limitation to one organ may be regarded as favourable to surgical interference. Forty of the cases died under the age of 5 years, and twenty under the age of 2 years. Cases have been met with in the foetus.

The course of the disease is longer the older is the child—an argument against operating in infancy. Pain and vomiting were common symptoms, but of no use as diagnostic signs. Hæmaturia occurred nineteen times, but only twice in the twelve cases which died during the first year of life. (May the hæmaturia not have been overlooked, because the urine would be passed into the garde-robe?) Hæmaturia was more common after three years of age. It is more frequent during the beginning than in the course of the illness. In two-thirds of the cases with hæmaturia this was the first symptom, or the symptom that made the parent seek medical advice. Only one death occurred directly from hæmorrhage.

Looking to the result of operations in infancy, the figures were not encouraging. In fact no case of recovery is on record. Several of the recorded cases succumbed in a few days from septic peritonitis—a preventable disease. Mr. Godlee's case was the most successful, but death followed within five months of the operation, which was well borne by the infant, aged only 22 months.

The conclusion, then, to be drawn at the present time was that operation of nephrectomy for new growths in infancy was unjustified by the records. The outlook indeed was very dreary, for the chief symptom (swelling of the belly) was not one that usually attracted attention, owing to its being so common a symptom, and one which is not regarded by the laity as of serious significance. If the tumour could be discovered when quite small, surgical interference might hereafter prove successful, but the drawback to its success, in infancy at least, was the great tendency to infiltration or secondary deposits.

Mr. SHEILD had examined three cases in children, and several in adults. In two of the children the abdomen was filled by the growth, and the caval vein formed a part of its wall. These growths should be removed at an early stage, when they are encapsulated and movable.

Mr. PITTS said these cases were hardly fair ones on which to found a general rule, for the first had only been under observation for four days,

and obviously came in for the post-mortem. The second case had a tumour weighing 11 lbs., and had only been observed two months. It was unfortunate that the mother had not observed earlier the size of the child. The third was a growth so large that operation was out of the question ; and the fourth, though it had been but two months in hospital, had been twelve months under observation. This case might have been a favourable one for operation when first discovered. The tumours, if left, would certainly prove fatal, though it was true that in all cases hitherto operated on the disease had recurred. He hoped that Dr. Money would for the present suspend his sweeping condemnation, and if he should find an early case amongst his patients, would still entrust it to the care of one of his surgical colleagues.

Dr. HUGHLINGS JACKSON asked how the tumour would be got at, and what was the method of operation in Mr. Godlee's case ?

Mr. JESSETT said the great difficulty was the diagnosis. The disease gradually crept on without symptoms. Hæmaturia as a rule was absent, and albumen in only one case out of four quoted. If he met with an early case he would remove it, and the method adopted would depend on the size of the growth ; if small, a lumbar, if large an abdominal incision, with drainage into the loin, as recommended by Mr. Knowsley Thornton.

Dr. MONEY, in reply, said that there had not yet been a single successful case. Mr. Godlee's would probably have lived as long had no operation been done. If early cases could be discovered, operation might be done ; but big bellies were common among children, and mothers did not pay much attention to them. The two successful cases (Godlee's and Hickey's) were removed by a median abdominal incision.

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April 25th, 1887.

## BLOOD CYST OF THE TONGUE.

By W. BRUCE CLARKE, F.R.C.S.

SARAH CARLTON, aged 23.

*History.*—About two years ago first noticed a slight swelling at the side of her tongue, which was tapped, and yielded some watery fluid. It was again tapped after more than a year, and some blood came out, after which it speedily refilled.

April 25th, 1887.—At present there is a cyst on the left side of the tongue about the size of a small nut. It has been tapped since the patient came into hospital, and some blood came out, but it refilled in a few seconds. The cyst is red on the surface, and covered with a few small veins. As to its exact nature, the question arises whether the growth is a mucous cyst, which has come to communicate with a small vein, or whether it is nævoid in

origin. From its history, the former would seem to be the more probable supposition.

N.B.—The case was subsequently operated on. An incision was made into the cyst with a pair of scissors, and the inside was freely cauterised with a Pacquelin cautery, which effected a complete cure. The incision revealed a considerable number of vessels, probably nævoid in character, in the neighbourhood of the tumour.

Mr. DAVIES-COLLEY would be glad to hear why this case was not a nævus. The blood cysts that he had seen had all been the result of injury or were degenerated nævi. A small nævus formed; this underwent cystic degeneration, and then the cyst became full of blood. The cysts at other times were full of clear serous fluid. For treatment he would recommend ligature; he had recently with success removed a large one in that way.

Mr. BOWREMAN JESSETT thought the case a nævus. He had treated one case by excision, and there was serious haemorrhage. He should remove the next by Pacquelin's cautery.

Mr. J. H. MORGAN said that the few cases of nævus of the tongue he had seen varied much in size at different times. He thought this might originally have been a nævus which had taken on a more active growth. For removal he would dissect it out freely with scissors, and afterwards cauterise it.

Mr. CLARKE, in reply, admitted the pathology of the case was doubtful. His view was that there had been a simple cyst to start with, and then a neighbouring vessel had been pricked and had bled into it. He thought the growth might be treated successfully in any one of a dozen ways, provided the method adopted was carried out effectually.

## SEVERE INJURY OF WRIST-JOINT WITH DIVISION NERVES, VESSELS, AND TENDONS TREATED BY CONSERVATIVE SURGERY.

By W. ROSE, F.R.C.S.

H. F., age 27, a butcher, was admitted into the Royal Free Hospital, on November 19th, 1886.

In trying to pull out a tin that had fallen into a sausage machine, his left hand was caught, and nearly severed through at the wrist by one of the revolving knives.

There was a transverse cut across the anterior aspect of the left wrist joint, dividing all the flexor tendons with the exception of the carpi ulnaris, the knife making a section of the pisiform bone and a portion of the trapezium, and the extensor ossis and primi

tendons. The radial and ulnar arteries and the median and ulnar nerves were also divided, and the wrist joint laid freely open. The remaining extensors, integument, and structures at the back of the wrist were uninjured.

The patient was anæsthetised, and the wound thoroughly washed with a solution of carbolic acid 1 in 20, and corrosive sublimate 1 in 500, and the Esmarch tourniquet applied.

The cut ends of the tendons which had retracted up their sheaths were sought for, and secured with Spencer Wells' forceps, and afterwards matched and stitched together. This was accomplished with some difficulty.

The divided ends of the median and ulnar nerves were then sought for, and the greatest care was taken to secure end to end union, a "tension-stitch" being used by passing catgut through the nerve ends a quarter of an inch from either extremity, and then introducing three or four very fine catgut stitches at equal distances through the nerve sheaths at the divided ends.

On removing the Esmarch, the efficiency of the posterior interosseous artery to carry on the circulation was demonstrated by free hæmorrhage from the distal ends of the divided radial and ulnar arteries, necessitating ligature.

The strictest antiseptic precautions were observed, the skin was drawn together by silk sutures, a drainage tube inserted, sal alem-broth gauze dressing applied, and the hand put up and retained in a flexed position, by means of a dorsal splint.

The progress of the case was very satisfactory, the wound and the joint healing without suppuration.

When dressed on the morning of the 21st there was sensation along the ulnar distribution of the third and little finger.

The parts supplied by the median nerve did not recover sensation until twenty-four days had elapsed, and after this there was considerable variation, the patient complaining of numbness, and then of a feeling of "pins and needles."

Passive movements of the joint and fingers were commenced at the end of six weeks, and the patient left the hospital on the 4th of February, 1887.

When shown to the Fellows of the Society, he had free movement of the wrist-joint, and fair movement of the fingers, but the nutrition of the skin of the finger-tips particularly was still defective, and the circulation somewhat embarrassed, possibly

from the cicatricial contraction at the wrist, the fingers becoming blue if the patient lets his hand hang down or exposes it to cold.

The patient returned to work in March, and has been able to make fair use of his hand.

Dr. HUGHLINGS JACKSON suggested the use of galvanism under the influence of which the interossei would probably recover perfectly. He had seen a case of atrophy of the interossei in both hands from traumatism followed by recovery after the constant current had been used. He asked whether the return of sensation was complete.

Mr. M. SHEILD had seen a case almost like the present one; that of a bookbinder, who cut the front of his wrist with a circular saw; the radial artery and flexor tendons were divided, but the joint was not opened, and the injury was not so severe as in the present instance. The case was treated antiseptically; sensation returned in seven days in the parts supplied by the divided nerve, and the muscles of the thumb recovered their movement. At the present time he had wasting of the thumb-muscles, and there was bullous eruptions at the ends of the fingers. In Mr. Rose's case, the smooth glossy condition of skin was present which had been pointed out by Sir James Paget as often associated with injuries to nerves. He had also marks like old blood-blister. Though complete union of a nerve took place, complete restoration of function might not.

Mr. B. CLARKE said the chief interest in the case centred in the future treatment. Complete sensation did not return with the rapidity that one could wish. It was a question whether the adhesions should be broken down rapidly or gradually, or whether massage should be adopted. He believed in the application in the first instance of a mild constant current, and afterwards the employment of massage.

Dr. ANGEL MONEY asked if the blackness of the fingers was paroxysmal in character? Some cases of peripheral neuritis resembled closely Reynaud's disease.

Mr. B. PITTS congratulated Mr. Rose in the present condition of the patient. He believed that much could be done by massage. In injuries to the upper extremity a great field was open for the employment of conservative surgery. He had seen many cases of wounds about the wrist dividing nerves and tendons, but it was very difficult to follow them afterwards. He had often experienced much difficulty in picking up divided tendons. After suturing nerves, a return of sensation had been noticed in a few hours.

Mr. DAVIES-COLLEY had seen many cases like the present, following injuries by glass. How were the upper ends of the tendons found? He had usually slit up the sheath in the palmar aspect, and picked them up in that way. He advocated the use of galvanism, and saw no necessity at present for cutting down on the nerves.

Mr. ROSE, in reply, said there was a considerable but not complete return of sensation. Galvanism had already been attempted, but not in a systematic way, as the man was at present earning his living as a butcher and did not attend the hospital regularly. The mark on the back of his finger was a cut inflicted two months ago; it illustrated the exceeding slowness of the referative process in an injured limb. Rubbing had been adopted thoroughly, but notwithstanding this the man had gone back a

good deal, the range of both passive and voluntary motion being less than it was. He, therefore, thought he would first break down the adhesions, and then, if necessary, cut down and look at the nerves. It was a difficult matter to find the cut ends of the tendons ; the house-surgeon flexed the arm and kneaded them down from above, and when they appeared at the cut end of the sheath he seized them with forceps.

## CASE OF EXTENSIVE NÆVOID GROWTH IN THE NECK, INVOLVING THE WHOLE OF LEFT EAR. ATTEMPTED REMOVAL BY DISSECTING THE GROWTH OUT. PARTIALLY SUCCESSFUL.

By F. BOWREMAN JESSETT, F.R.C.S.

A. B., a young man, aged 19 years, was admitted into the Cancer Hospital, Brompton, in November, 1886, suffering from an extensive nævoid growth implicating deeply the left ear and parotid region, and extending downwards to about  $1\frac{1}{2}$  inches below the angle of the jaw.

*Previous History.*—He had a small mark in the front of the left ear from birth, but at the age of five this commenced to enlarge, and to grow somewhat quickly. At the age of twelve he had a growth removed from the concha of the ear. This bled profusely, and it was with some difficulty that the haemorrhage was stopped. The wound resulting from the operation healed well, and nothing further had been done to arrest the growth of the disease until the present time.

*Present State.*—A large growth is seen occupying the left side of the neck, measuring 5 inches from before backwards, and nearly 6 inches from above downwards, projecting considerably, and pushing the ear forward and outwards for about  $1\frac{1}{2}$  inches. It is soft and compressible, and has the feel of a “ bag of large worms.” The growth can be much decreased in size by firm pressure. There is slight pulsation, but this probably is transmitted. The growth had increased a good deal of late, and the lad was very anxious to have something done for it.

I decided on endeavouring to dissect the growth out, and after a few days' stay in the hospital I operated upon him with this view.

I made a long incision, extending from behind the ear downwards parallel to the anterior edge of the sterno-mastoid muscle to

about an inch below the lowest point of the growth. I then made another incision from the angle of the jaw at right angles to the previous one, and meeting it about midway ; the flap thus formed was carefully dissected back, but even here the hæmorrhage was rather excessive, but easily controlled by pressure forceps. I next proceeded to free the growth from its surroundings at its lower margin, and found that it extended somewhat deeply, and the hæmorrhage was very profuse. By the free use of pressure forceps I was enabled to dissect the nævus out of its bed pretty well until I got to a level of the auditory meatus ; here the growth dipped deeply down into the parotid region, and the hæmorrhage becoming somewhat alarming, I determined not to attempt to proceed further. I therefore transfixed the growth with a stout silk ligature, and tied in two halves, cutting off the portion I had detached with scissors. Strong catgut sutures were applied to the numerous bleeding vessels that had been divided, and the wound closed, a large drainage tube being inserted.

The wound healed slowly, and there was a good deal of suppuration, but after a few weeks it all healed firmly and well, and, as you see, there is now a good firm cicatrix, and the growth is completely arrested at the part operated on. But the part of the growth at the upper part surrounding the ear still causes a good deal of disfigurement, and I propose to operate upon this with a view if possible of dissecting this part also out.

*Remarks.*—I adopted the plan of treatment of endeavouring to dissect the growth out, as it was obvious that it could not be removed or obliterated either by ligature or electrolysis, and in consequence of the large size of the vessels it would have been highly dangerous to inject the perchloride of iron, or to pass threads soaked in the perchloride through the growth.

Mr. ROSE congratulated Mr. Jessett on the result he had obtained. He thought it far more scientific and surgical to lay open the skin and deal with the growth than to treat it subcutaneously. Was the pulsation conducted or inherent, and had the stethoscope been used as an aid to diagnosis ?

Mr. DAVIES-COLLEY said a large number of these growths were best treated by excision, but there was usually danger of hæmorrhage. A method of dealing with them that he had advocated in 'Guy's Hospital Reports' was the following :—Two, three, or four harelip pins were passed under or through the deep part of the tumour crosswise, then an ordinary drainage-tube was wound round them beneath their ends, like an Esmarch's bandage, and the growth could be dissected out with little or no hæmorrhage. A pad of boric lint was then put on, and pressure applied, which con-

trolled the haemorrhage completely. He had treated at least 200 or 300 cases in this way, and had not had a bad result, or any trouble from haemorrhage.

Mr. B. PITTS said the treatment of naevus in an adult by electrolysis was slow, and involved many sittings. The wisest, most satisfactory, and speedy way was by excision. In children, it was necessary to avoid making a free dissection or causing great loss of blood. In them the largest naevi could be cured by electrolysis with perseverance. The most difficult cases were the subcutaneous naevi with one or two feeding vessels. These should be treated by preliminary ligature, followed by electrolysis, or by excision.

Mr. J. H. MORGAN could vouch for the efficacy of Mr. Davies-Colley's method. He removed a naevus recently in that way from the temporal region with almost no bleeding. He took away a large flap of skin which was involved, and obtained a small white cicatrix. Had the tissue been examined which Mr. Jessett had removed? Mr. Pitts had had a similar case recently which was not of a naevous character, but consisted of a growth of hypertrophied cellular tissue involving the ear and side of the face. In the present case there was very little evidence of naevous growth in the parts that remained.

Mr. JESSETT, in reply, thought the pulsation was transmitted. The growth had been examined by a pathologist, and found to be of distinctly naevous character.

## TUMOUR OF THE LOWER JAW.

By A. MARMADUKE SHEILD, F.R.C.S.

A MAN, aged 32, had noticed a tumour on his lower jaw for a period of five years. He attributed its formation to irritation about the second molar tooth of the left side, which was "broken in" at an attempt at extraction by a dentist. The growth was at first of small size, and has gradually increased, causing inconvenience by its bulk and position.

On the left molar jaw, opposite the site of the second molar tooth, was a tumour the size of a pigeon's egg. It projected into the cavity of the mouth, with a tendency to pedunculation, was hard and osseous in consistence, somewhat lobulated on the surface, and covered by pale mucous membrane. The jawbone in its immediate vicinity was tender, but not thickened or infiltrated. Looking at the slow rate of growth and the firm consistence of this tumour, the diagnosis arrived at was that of an exostosis or calcified fibrous epulis, most probably the latter variety of tumour.

The case was presented to the Society to elicit opinion as to the best mode of treatment. Was the growth alone to be removed, or was a portion of the alveolus of the jaw to be taken away with it?



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